ORDER NO. MD9805100C3

Service Manual

CD Stereo System

SA-AK85

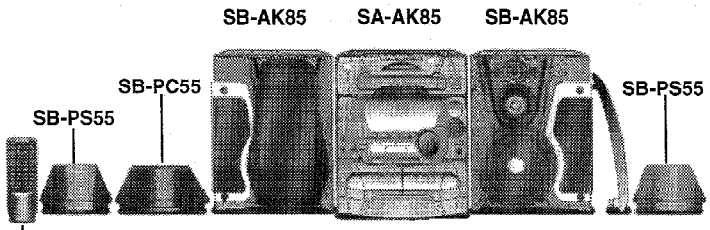
DOLBY B NR *2

COMPACT disc DIGITAL AUDIO

COMPACT disc DIGITAL VIDEO

MASH *1
multi-stage noise shaping

CD Stereo System



Colour
(S) ..... Silver Type

Areas
(GK) ..... China.
(GH) ..... Hong Kong.
(GC) ..... Asia, Latin America, Middle East and Africa.

System	SC-AK85
Main unit	**SA-AK85**
Front Speakers	SB-AK85*3
Center Speaker	SB-PC55*3
Surround Speakers	SB-PS55*3

*3 Made in MESA.

Tape Deck: AR-2 Mechanism Series
Traverse Deck: RAE0152Z Mechanism Series

Specifications

AMPLIFIER SECTION

RMS	2 × 100 W (THD 10%, 6 Ω)
PMPO	2500 W (6 Ω)
Input sensitivity and impedance	
AUX	250 mV, 10 kΩ
MIC	0.7 mV, 600 Ω

FM TUNER SECTION

Frequency range	87.5 – 108.0 MHz
Sensitivity	
S/N 26 dB	1.5 μV
Antenna terminal(s)	75 Ω (unbalanced)

AM TUNER SECTION

Frequency range	522 – 1629 kHz (9 kHz steps) 520 – 1630 kHz (10 kHz steps)
Sensitivity (for 50 mW, 500 mW) (at 1000 kHz)	500 μV/m

CASSETTE DECK SECTION

Track system	4 track, 2 channel
Heads	
Record/playback	Solid permalloy head
Erasure	Double gap ferrite head
Motor	DC servo motor
Recording system	AC bias 100 kHz
Erasing system	AC erase 100 kHz
Tape speed	4.8 cm/s
Frequency response (+3 dB, −6 dB) at DECK OUT	
NORMAL	35 Hz – 14 kHz
HIGH	35 Hz – 14 kHz
S/N	
Dolby NR off	50 dB (A weighted)
Dolby NR on	60 dB (CCIR)
Wow and flutter	0.18% (WRMS)
Fast forward and rewind time	Approx.120 seconds with C-60 cassette tape

CD SECTION

Sampling frequency	44.1 kHz
Decoding	16 bit linear
Beam source/wave length	Semiconductor laser / 780 nm
Number of channels	Stereo
Frequency response	20 Hz – 20 kHz (+1, −2 dB)
Wow and flutter	Below measurable limit
Digital filter	8 fs
D/A converter	MASH (1 bit DAC)
Video CD	
Physical format	Based on CD-ROM format
Video data	Based on MPEG 1
Audio data	Based on MPEG 1 Layer 2
Video output	
Video format	NTSC/PAL
Output	1 Vp-p, 75 Ω

GENERAL

Power consumption	168 W
Power supply	AC 220 V, 50 Hz [for (GK)(GH) areas] AC 110 V/127 V/ 220 V/230 – 240 V, 50/60 Hz [for (GC) area]
Dimensions (W×H×D)	270×345×347 mm
Weight	8.2 kg

Notes:
Specifications are subject to change without notice.
Weight and dimensions are approximate.
Total harmonic distortion is measured by the digital spectrum analyzer.
*1 MASH is a trade mark of NTT.
*2 Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"DOLBY" and the double-D symbol ◻◻ are trademarks of Dolby Laboratories Licensing Corporation.

⚠WARNING
This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Panasonic®

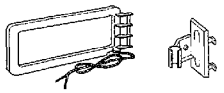
© 1998 Matsushita Electric Industrial Co.,Ltd.
All rights reserved. Unauthorized copying and distribution is a violation of law.

■ Contents

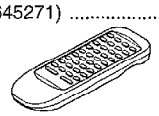
	Page
Accessories	2
Before Repair	2
Protection Circuitry	2
Handling Precaution for Traverse Deck	3
Precaution of Laser Diode	3
Note on AC Power Supply Cord (For Hong Kong)	3
Placement of Speakers	4
Connections	5 – 8
Front Panel Controls	9, 10
Demo Function	11
Setting the Time	11
Presetting Radio Broadcasts	12
Listening to Radio Broadcasts	13
Loading and Checking CDs	14
Playing Audio CDs and Video CDs (not equipped with the playback control function)	15
Playing Video CDs (with the playback control function)	16
Using the Menu Screen	17, 18
Various CD Playback	18 – 21
Listening to Tapes	22, 23
Before Recording (Deck 2 only)	24
Recording from Radio Broadcasts	25
Recording from Compact Discs	26, 27
Tape-to-tape Recording	28
Using the Built in Sound Quality/Sound Field Settings	29
Varying the Sound Quality with the Acoustic Image (AI) Equalizer	30
Varying the Sound Quality with Manual Equalizer	31
Singing Along with KARAOKE	32, 33
Using the Timer	34 – 37
Convenient Functions	38
Self-Diagnostic Function	39
Operation Checks and Component Replacement Procedures	40 – 52
Schematic Diagram	53 – 80
Printed Circuit Board Diagram	81 – 91
Wiring Connection Diagram	92, 93
Type Illustration of IC's, Transistors and Diodes	94
Terminal Function of IC's	95 – 103
Measurements and Adjustments	104 – 106
Troubleshooting Guide for Video Circuit	107 – 111
Troubleshooting Guide for CD Servo Circuit	112, 113
Block Diagram	114 – 122
Loading Unit Parts Location	123
Cabinet Parts Location	124, 125
Mechanism Parts Location	126, 127
Replacement Parts List	128 – 137
Packaging	138

■ Accessories

- AM loop antenna set (RSA0022) 1

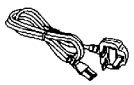


- Remote control transmitter (EUR645271) 1

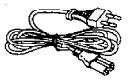


- Video connection cable (RJL1P016B15) 1

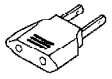
- AC power supply cord [for (GH) area only] (RJA0053-1X) 1



- AC power supply cord [for (GK)(GC) areas]
  (RJA0019-X) for (GC) area 1
  (RJA0055-K) for (GK) area 1



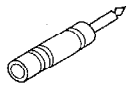
- Power plug adaptor [for (GK) area only] (SJP5213-2) 1



- FM indoor antenna (RSA0006-J) 1

- Batteries for remote control transmitter (R6/LR6, AA, UM-3) 2
  Note: These are available on sales route.

- Microphone adaptor [for (GK) area only] (RJP1C0801) 1



■ Before Repair

(1) Turn off the power supply. Using a 10 Ω, 10 W resistor, connect both ends of power supply capacitors (C506, C507 and C508) in order to discharge the voltage.
(2) Before turning the power supply on, after completion of repair, slowly apply the primary voltage by using a power supply voltage controller to make sure that the consumed current at 50/60 Hz in NO SIGNAL mode should be shown below.

For (GC) area.

Power supply voltage	AC 110 V, 50/60 Hz	AC 127 V, 50/60 Hz	AC 220 V, 50/60 Hz	AC 230-240 V, 50/60 Hz
Consumed current	Less than 500 mA	Less than 460 mA	Less than 250 mA	Less than 210 mA

For (GH) and (GK) areas.

Power supply voltage	AC 220 V, 50 Hz
Consumed current	Less than 190 mA

■ Protection Circuitry

The protection circuitry may have operated if either of the following conditions is noticed:
- No sound is heard when the power is switched ON.
- Sound stops during a performance.

The function of this circuitry is to prevent circuitry damage if, for example, the positive and negative speaker connection wires are "shorted", or if speaker systems with an impedance less than the indicated rated impedance of this unit are used.
If this occurs, follow the procedure outlined below:
1. Switch OFF the power.
2. Determine the cause of the cause of the problem and correct it.
3. Switch ON the power once again.

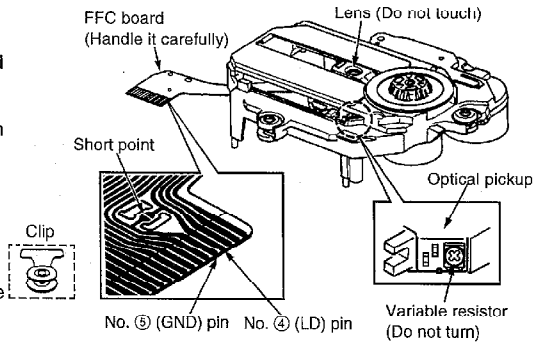
Note:
When the protection circuitry functions, the unit will not operate unless the power is first switched OFF and then ON again.

■ Handling Precaution for Traverse Deck

The laser diode in the traverse deck (optical pickup) may break down due to potential difference caused by static electricity of clothes or human body.
So, be careful of electrostatic breakdown during repair of the traverse deck (optical pickup).

• Handling of traverse deck (optical pickup)

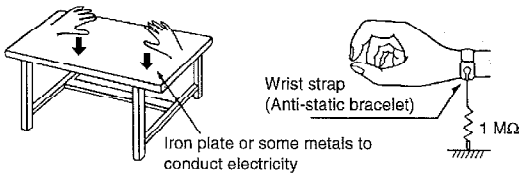
1. Do not subject the traverse deck (optical pickup) to static electricity as it is extremely sensitive to electrical shock.
2. To protect the laser diode against electrostatic breakdown, short the flexible board (FFC board) with a clip or similar object.
3. Take care not to apply excessive stress to the flexible board (FFC board).
4. Do not turn the variable resistor (laser power adjustment). It has already been adjusted.



• Grounding for electrostatic breakdown prevention

1. Human body grounding
   Use the anti-static wrist strap to discharge the static electricity from your body.
2. Work table grounding
   Put a conducive material (sheet) or steel sheet on the area where the traverse deck (optical pickup) is placed, and ground the sheet.

Caution:
The static electricity of your clothes will not be grounded through the wrist strap.
So,take care not to let your clothes touch the traverse deck (optical pickup).



Caution when Replacing the Traverse Deck:

The traverse deck has a short point shorted with solder to protect the laser diode against electrostatic breakdown. Be sure to remove the solder from the short point before making connections.

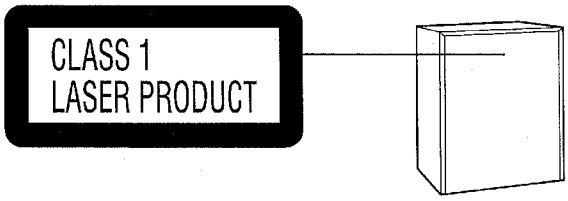
CAUTION:
THIS PRODUCT UTILIZES A LASER.
USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

■ Precaution of Laser Diode

CAUTION: This product utilizes a laser diode with the unit turned "on", invisible laser radiation is emitted from the pick up lens.
Wave length: 780 nm
Maximum output radiation power from pick up: 100 µW/VDE

Laser radiation from the pick up unit is safety level, but be sure the followings:

1. Do not disassemble the pick up unit, since radiation from exposed laser diode is dangerous.
2. Do not adjust the variable resistor on the pick up unit. It was already adjusted.
3. Do not look at the focus lens using optical instruments.
4. Recommend not to look at pick up lens for a long time.

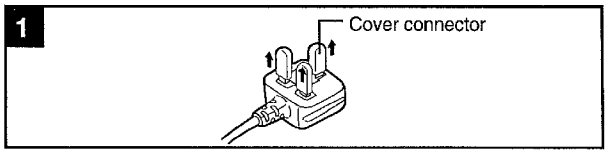


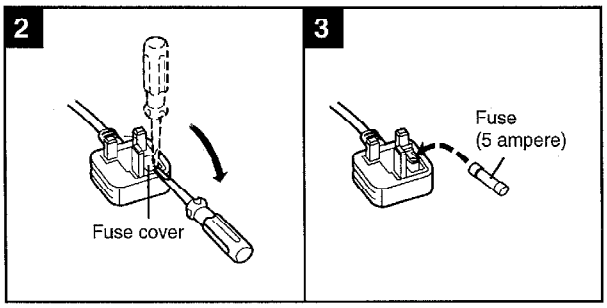
DANGER	INVISIBLE LASER RADIATION WHEN OPEN. AVOID DIRECT EXPOSURE TO BEAM.	(Inside of product)
ADVARSEL	USYNLIG LASERSTRÅLING VED ÅBNING, NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSÆTTELSE FOR STRÅLING.	(Indersiden at apparatet)
VARO!	AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NÄKYMÄTÖNTÄ LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.	(Tuotteen sisällä)
VARNING	OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. BETRAKTA EJ STRÅLEN.	(Apparatens insida)
ADVARSEL	USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES OG SIKKERHEDSLÅS BRYTES. UNNGÅ EKSPONERING FOR STRÅLEN.	(Produktets innside)
VORSICHT	UNSICHTBARE LASERSTRAHLUNG, WENN ABDECKUNG GEÖFFNET. NICHT DEM STRAHL AUSSETZEN.	(Im Inneren des Gerätes)

■ Note on AC Power Supply Cord (For Hong Kong)

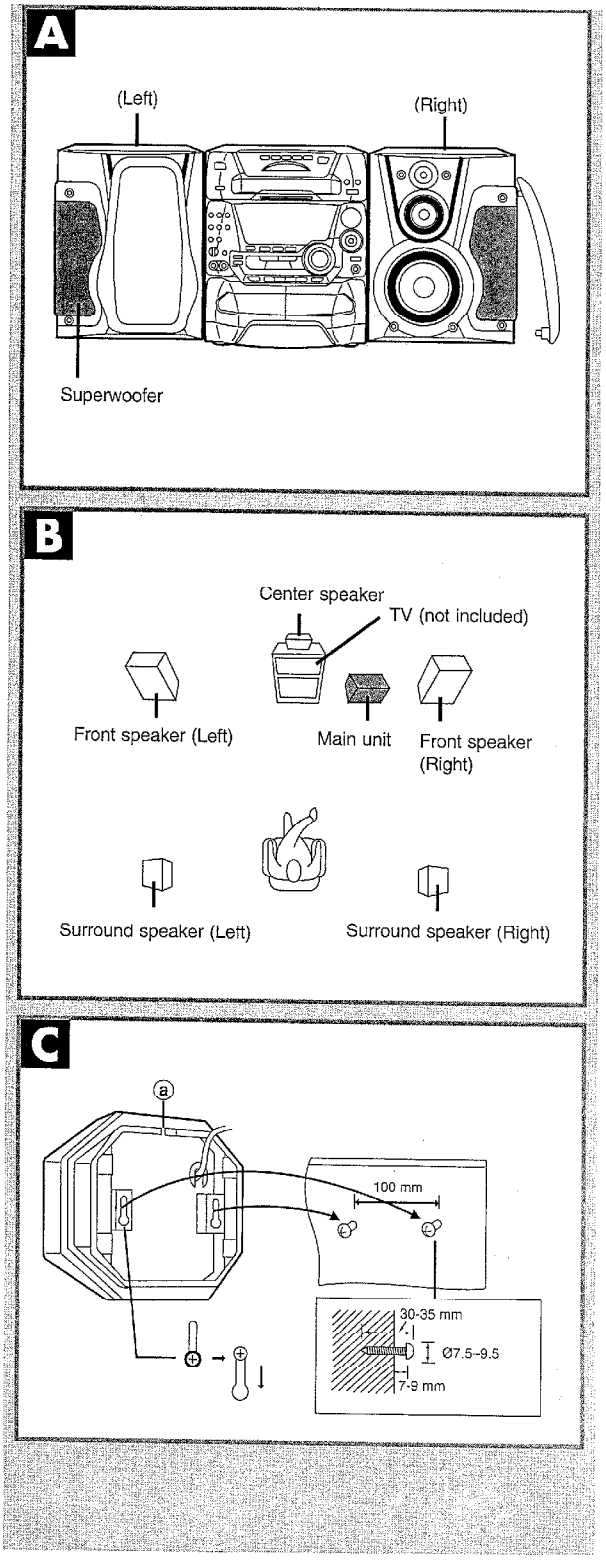
Before use:
Remove the connector cover as shown in Fig.1.

How to replace the fuse:
1. Open the fuse cover with a scerwdriver shown in Fig.2.
2. Replace the fuse and close the fuse cover shown in Fig.3.





■ Placement of Speakers



Placement of front speakers

For your listening pleasure, keep your speakers from touching the system.

Place the speakers so that the superwoofer is on the outside. A

For your reference
You can take the front net off the speakers.

Placement of surround speakers B

As well as enjoying normal stereo reproduction with the left and right front speakers, a center speaker and surround speakers can also be connected to the system in order to enjoy a feeling of depth and movement of sound.

We recommend that surround speakers be placed on the side of or slightly behind the listener at ear level.
However the position should be adjusted to your personal preference, because the effect varies to some degree depending upon the type of music and the music source.

Attaching to wall C

Set speaker onto screws and slide through bracket to lock into position.

Note

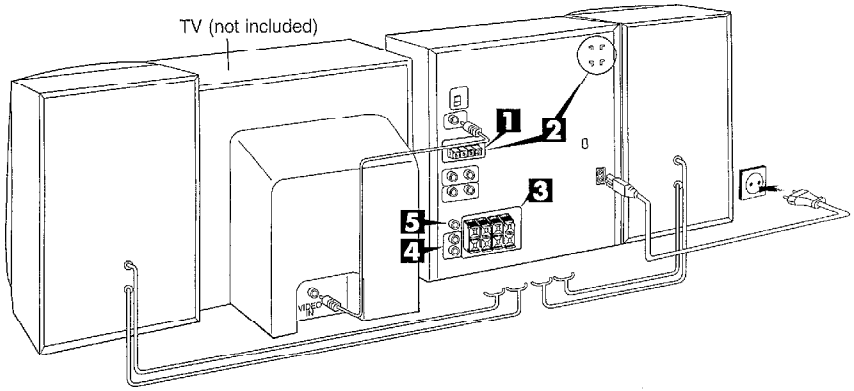
The wall or pillar on which the speaker systems are to be attached should be capable of supporting a weight of 5 kilograms.

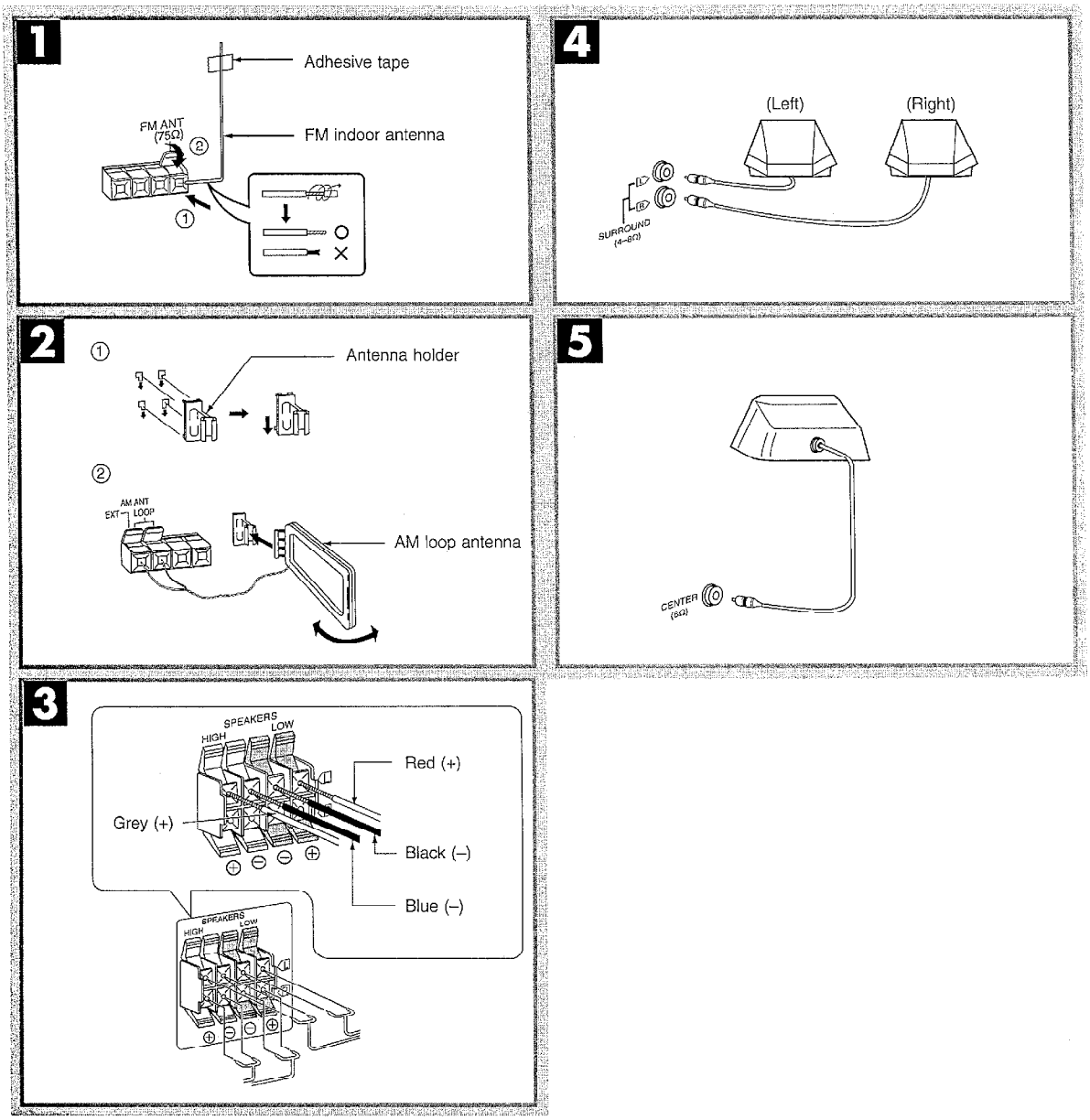
For your reference
To fix the wire feed it through slit ⓐ in the center-bottom of the speaker.

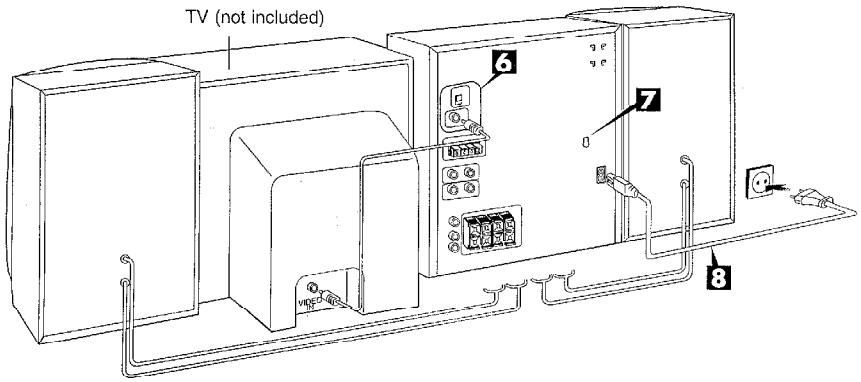
Caution
Use the speakers only with the recommended system.
Failure to do so may lead to damage to the amplifier and/or the speakers, and may result in the risk of fire.
Consult a qualified service person if damage has occurred or if you experience a sudden change in performance.

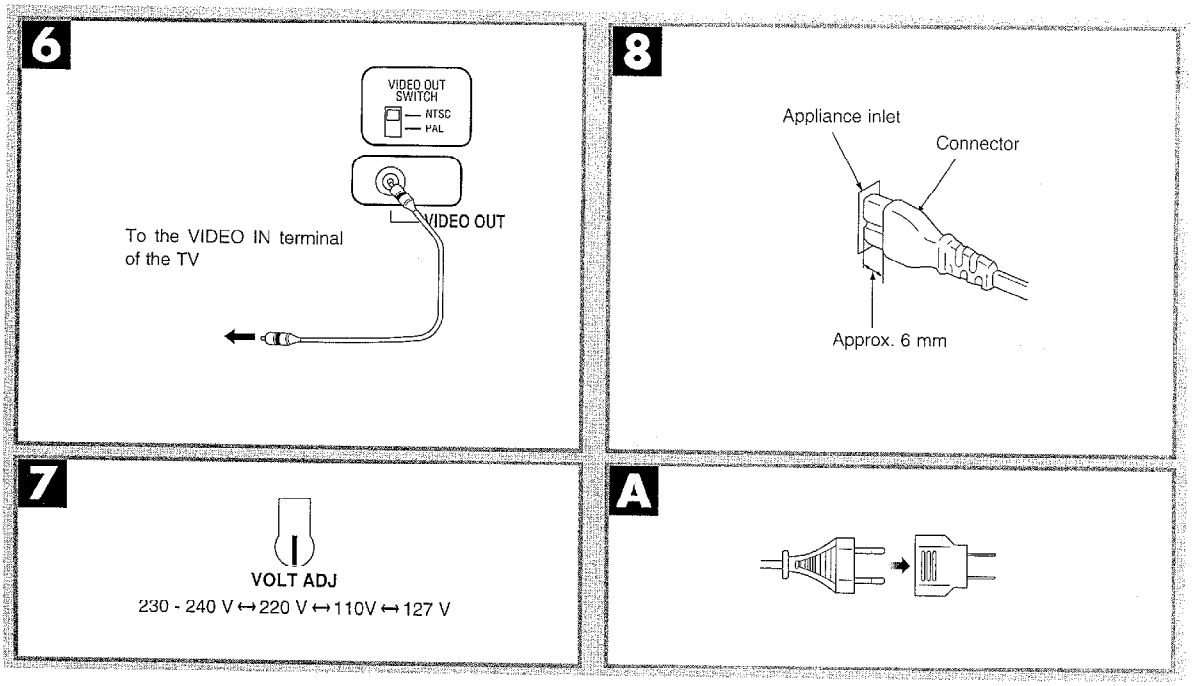
Note for front/center speakers
These speakers are made so as to be able to be used in close proximity to the TV, but irregular colouring may result due to how the system is placed. If such distortion occurs, turn off the TV for sometime between 15 and 30 minutes. The demagnetizing function of the TV will eliminate the distortion. If the irregular colouring is still visible, then move the speakers further away from the TV. Please note that if there is a magnetic object near the TV, irregular colouring may result due to the interaction between the TV and the speaker.

■ Connections






TV (not included)
6
7
8


6
VIDEO OUT SWITCH
NTSC
PAL
VIDEO OUT
To the VIDEO IN terminal of the TV
8
Appliance inlet
Connector
Approx. 6 mm
7
VOLT ADJ
230 - 240 V ↔ 220 V ↔ 110V ↔ 127 V
A

Basic connections (for supplied accessories)

- Plug the AC power cord into a household AC outlet only after all other connections have been made.
- To prepare the AM loop antenna wire and speaker cords, twist the vinyl cover tip and pull off.

1 Connect the FM indoor antenna.

Tape the antenna to a wall or column, in a position where radio signals are received with the least amount of interference.

Note

For best reception sound quality:
An FM outdoor antenna is recommended.

2 Connect the AM loop antenna.

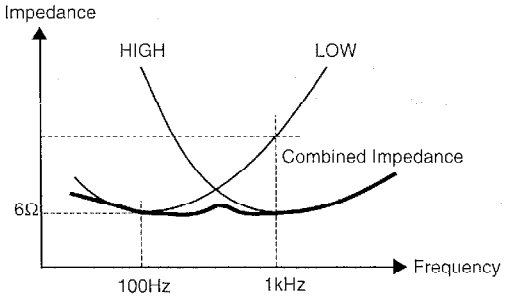
After attaching the antenna, turn on the system and tune in a broadcast station. Then, turn the antenna to the angle of best reception and least interference.

3 Connect the front speaker cables.

Connect each end of the speaker cables to the terminal lever of the same colours.

When speakers are connected to the low and high terminals on the back of the main unit

They are designed to have a combined impedance of 6Ω.
Be sure to use only the speakers supplied.



Caution

- Never use speakers other than those supplied. For instance, if you connect speakers with an impedance of 6Ω each and plug them into the low and high terminals, you will only have a combined impedance of 3Ω.
- To prevent damage to circuitry, never short-circuit positive (+) and negative (–) speaker wires.

4 Connect the surround speaker cables.

Check the L (Left) or R (Right) channels indication on the underside of the speakers for correct placement. Place the speakers with the Panasonic logo facing toward the listening position.

Note

If only one of the surround speakers is connected, no sound will come out. Be sure to connect both speakers.

5 Connect the center speaker cable.

6 (For Video CD playback) Connect the video connection cable.

1. Connect the video connection cable from the VIDEO OUT terminal of the rear panel of this unit to the VIDEO IN terminal of the TV.
2. Set the VIDEO OUT switch according to the television set to be connected.
   NTSC: When connecting the NTSC system TV.
   PAL: When connecting the PAL system TV.

For details, refer to the operating instructions of TV.

7 (Only when your system has VOLT ADJ) Set the voltage.

Use a flat-head screwdriver to turn the voltage selector on the rear panel to the appropriate position for the area in which this system is used.
If the power supply in your area is 115 V or 120 V, please set the voltage selector as follows:

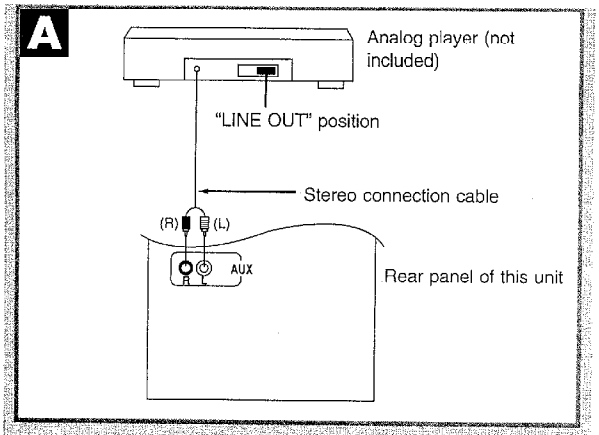
- For 115 V: Set to 110 V.
- For 120 V: Set to 127 V.

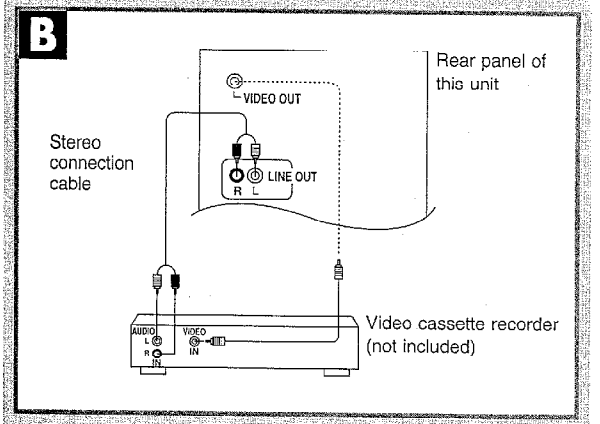
8 Connect the AC power cord.

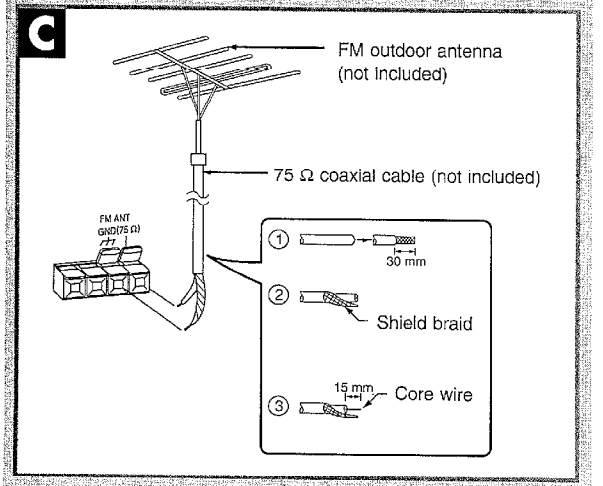
For areas except China and Hong Kong:
If the power plug does not fit your socket, use the power plug adaptor (included). **A**

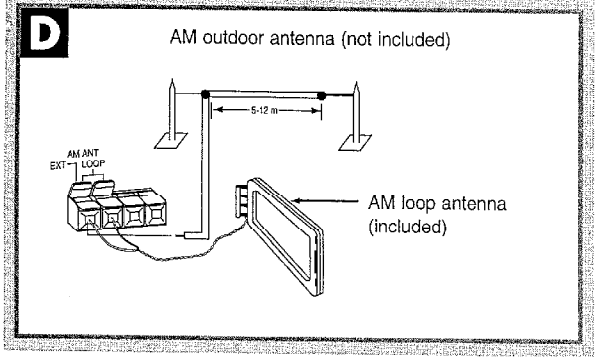
Insertion of connector

Even when the connector is perfectly inserted, depending on the type of inlet used, the front part of the connector may jut out as shown in the drawing.
However there is no problem using the unit.









External unit connection

- For details, refer to the instruction manual of the units which are to be connected.
- When units other than those described below are to be connected, please consult with your audio dealer.

Stereo connection cable (not included)
White (L)
Red (R)

AUX terminal connections A

This example shows how to connect an analog player with the PHONO OUT/LINE OUT switch.

Notes

- Only an analog player with a built-in phono equalizer can be connected.
  Set the switch to the "LINE OUT" position at the back of the analog player.

LINE OUT terminal connections B

Note

If connecting VIDEO OUT of this unit to VIDEO IN of VCR, you can simultaneously record sounds and visuals from video CDs.

Optional antenna connections

You may need an outdoor antenna if you use this system in a mountainous region or inside a reinforced-concrete building, etc.

FM outdoor antenna C

Disconnect the FM indoor antenna if an FM outdoor antenna is installed.
① Remove a piece of the outer vinyl insulator.
② Twist the shield braid.
③ Expose the core wire.

Note

An outdoor antenna should be installed by a competent technician only.

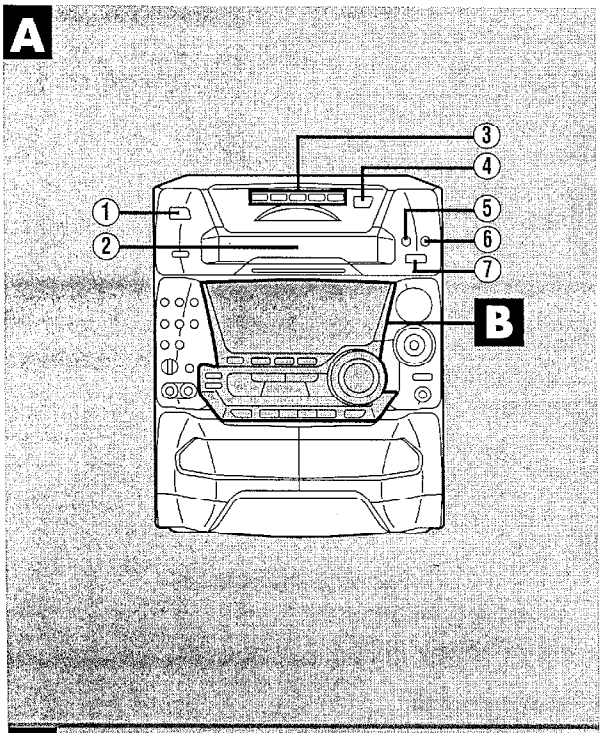
AM outdoor antenna D

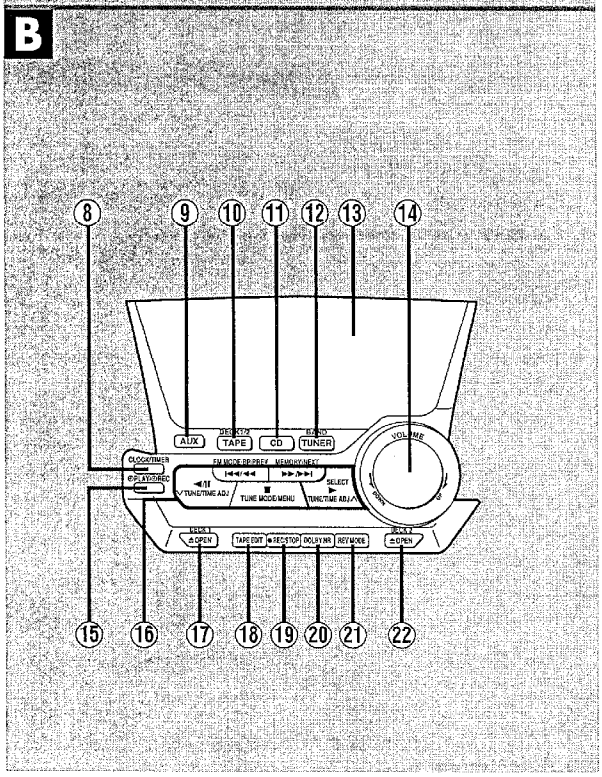
Connect the outdoor antenna without removing the AM loop antenna. Run 5 to 12 m of vinyl-covered wire horizontally along a window or other convenient location.

Note

When the unit is not in use, disconnect the outdoor antenna to prevent possible damage that may be caused by lightning. Never use an outdoor antenna during an electrical storm.

■ Front Panel Controls





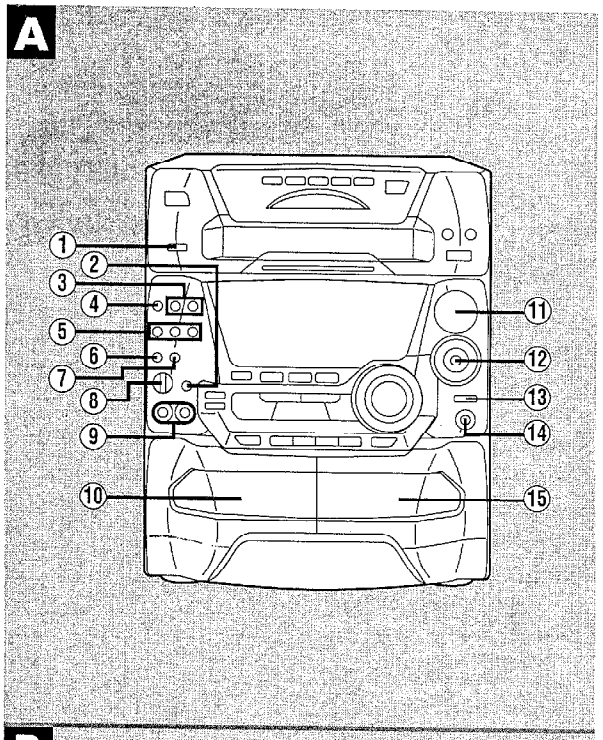
Main unit A

No.	Name
①	Power "STANDBY⏻/ON" switch (POWER, STANDBY⏻/ON) Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power.
②	Disc tray
③	Disc select buttons and indicators (DISC 1–DISC 5)
④	CD manager button (CD MANAGER)
⑤	Disc tray open/close button (⏏ OPEN/CLOSE)
⑥	Disc check open button (⏏ NEXT OPEN)
⑦	Random play button (RANDOM)

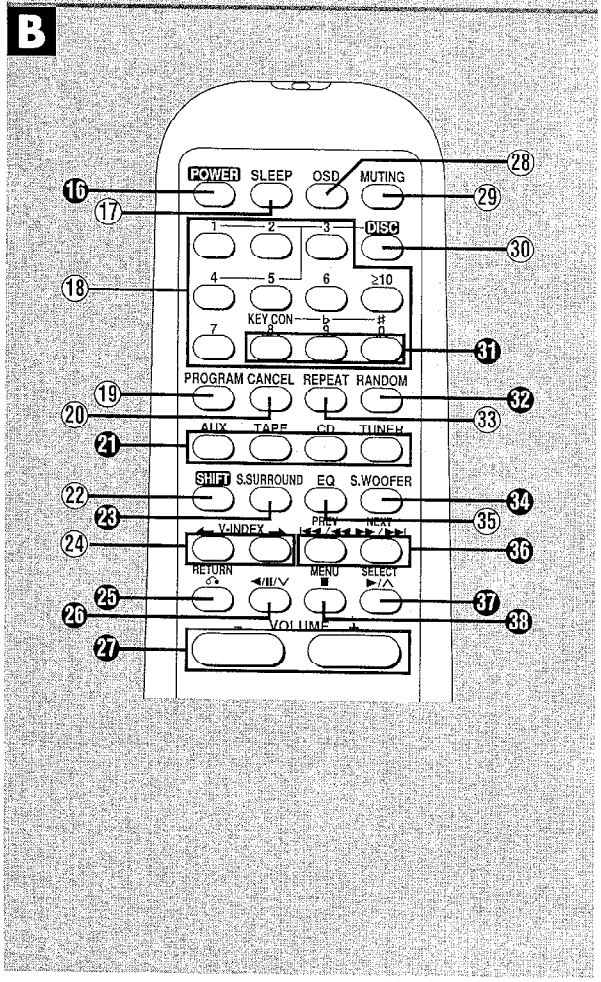
Center console B

⑧	Clock/timer button (CLOCK/TIMER)
⑨	AUX button (AUX)
⑩	Tape/deck select button (TAPE, DECK1/2)
⑪	CD button (CD)
⑫	Tuner/band select button (TUNER, BAND)
⑬	Display
⑭	Volume control (VOLUME)
⑮	Play timer/record timer button (⏲PLAY/⏲REC)
⑯	Basic operating buttons Functions change according to the source.
⑰	Deck 1 open button (⏏ OPEN, DECK 1)
⑱	Tape edit button (TAPE EDIT)
⑲	Recording start/stop button (● REC/STOP)
⑳	Dolby noise reduction button (DOLBY NR)
㉑	Reverse mode select button (REV MODE)
㉒	Deck 2 open button (⏏ OPEN, DECK 2)

A



B



Main unit (continued) A

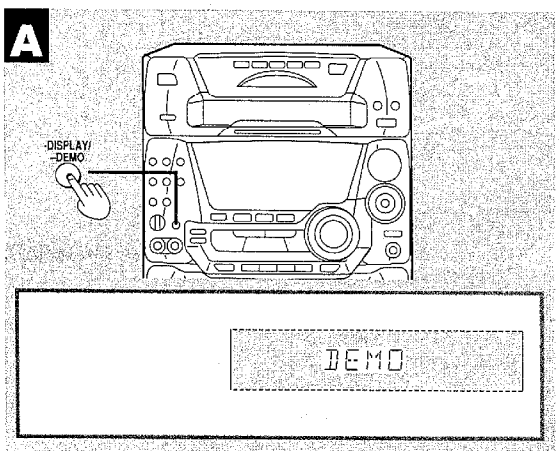
No.	Name
①	Super surround select button (SUPER SURROUND)
②	Display select/demonstration button (-DISPLAY/–DEMO)
③	Menu –, + buttons (MENU –, +)
④	Return button (↶ RETURN)
⑤	Key control buttons (KEY CON, ♭, ♯)
⑥	Karaoke button (KARAOKE)
⑦	Echo button (ECHO)
⑧	Microphone volume control (MIC VOL)
⑨	Microphone jacks (1–MIC–2)
⑩	Deck 1 cassette holder
⑪	Acoustic Image equalizer display (AI EQ)
⑫	Sound equalizer control/indicators (SOUND EQ)
⑬	Super woofer on/off button (S.WOOFER)
⑭	Headphone jack (PHONES)
⑮	Deck 2 cassette holder

Remote control B

Buttons such as ⑯ function in exactly the same way as the buttons on the main unit.

No.	Name
⑯	Power button (POWER)
⑰	Sleep button (SLEEP)
⑱	Numeric buttons
⑲	Program button (PROGRAM)
⑳	Cancel button (CANCEL)
㉑	Input selection buttons (AUX, TAPE, CD, TUNER)
㉒	Shift button (SHIFT)
㉓	Super surround select button (S.SURROUND)
㉔	Video index button (◄ V-INDEX ►)
㉕	Return button (RETURN, ↶)
㉖	◄/II/∨ button (◄/II/∨)
㉗	Volume buttons (– VOLUME +)
㉘	OSD button (OSD)
㉙	Muting button (MUTING)
㉚	Disc button (DISC)
㉛	Key control buttons (KEY CON, ♭, ♯)
㉜	Random button (RANDOM)
㉝	Repeat button (REPEAT)
㉞	Super woofer on/off button (S.WOOFER)
㉟	Equalizer button (EQ)
㊱	Previous, next, I◄◄/◄◄, ►►/►►I buttons (PREV, I◄◄/◄◄, NEXT, ►►/►►I)
㊲	Select, ►/∧ button (SELECT, ►/∧)
㊳	Menu on/off, stop button (MENU, ■)

■ Demo Function A



When the demo function is activated, a demonstration of the spectrum analyzer using space travel images is shown on the display panel.

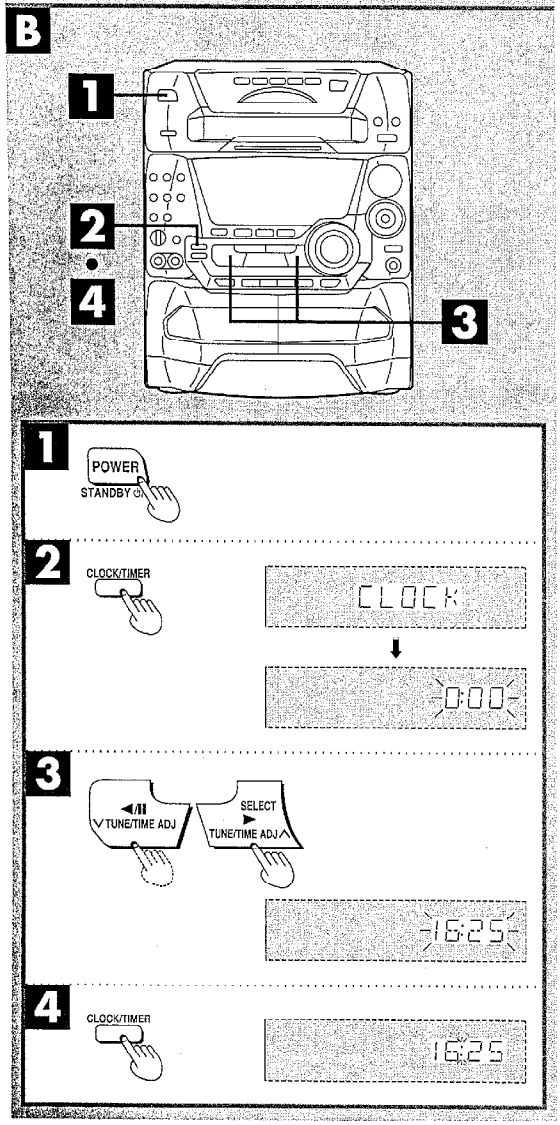
Turning the demo function ON/OFF
Press POWER and hold down -DISPLAY/-DEMO.
Every time you hold down the button:

DEMO (ON) ↔ NO DEMO (OFF)

When the demo function is ON, the demo is played automatically in the following cases.

- **When power is ON**
  If the input source is set to CD or tape, and the system is left on standby for more than 2 minutes.
- **When power is OFF**
  If the clock has not been set.

Setting the time B



This is a 24-hour display clock.
This example in the figure shows how to set the time for 16:25 (4:25 p.m.).

1 **Switch on the power.**

2 **Press CLOCK/TIMER to select "CLOCK".**
Every time you press the button:

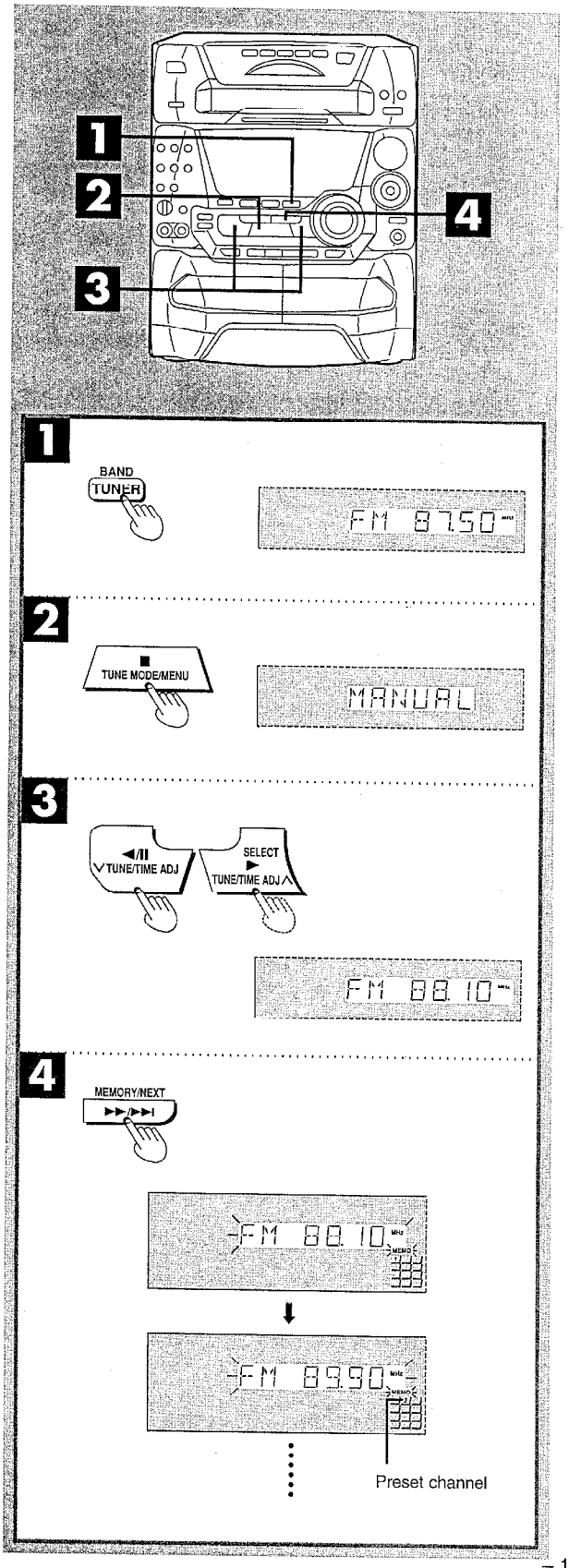
CLOCK → ⏲PLAY → ⏲REC
↑ Previous display ←

3 **(within 7 seconds or so)**
Press ∨ or ∧ to show the present time.

4 **Press CLOCK/TIMER to finish setting the time.**
The display will return to whatever was displayed before you set the time.

To display the time when power is ON
Press CLOCK/TIMER to select "CLOCK".
The time will be displayed for about 5 seconds and then the display will return to whatever was previously displayed.

■ Presetting Radio Broadcasts



- Up to 12 stations can be set in each band with the automatic or manual memory presetting.
- If broadcast frequencies are preset in the memory, you can easily tune in any of these frequencies from the system or remote control unit.
- You can preset just those stations you like. (See "Presetting only your favourite stations" below.)

1 **Press TUNER BAND to select band.**
The power will come on automatically.
Every time you press the button: "FM" ↔ "AM".

2 **Press TUNE MODE to select "MANUAL".**
Every time you press the button: "MANUAL" ↔ "PRESET".

3 **Press ∨ or ∧ until the display shows the frequency from which you want to begin automatic memory presetting.**

Tips on tuning in radio stations
① Hold down either arrow button until the frequency numbers start scrolling.
② When near to the frequency you are looking for, press the button repeatedly until the station is tuned in.

4 **Press and hold MEMORY until the frequency begins to change.**
This will start presetting automatically. When finished, the radio will tune in the last station memorized.

If auto presetting is not possible because radio signals are weak or for some other reason, do the following.

Presetting only your favourite stations

Preset the stations one at a time.
1. Perform step **1** above. Then, press MEMORY ("MEMO" flashes) and select a station with ∨ or ∧.
2. While "MEMO" is flashing, press MEMORY again and select a preset channel with ∨ or ∧.
3. Press MEMORY to preset the station.

Memory retention
Your preset is retained in memory for about 2 weeks while the system is unplugged.

AM allocation settings:
This system comes equipped with an electronic digital tuner that divides the broadcast band into many small steps. These steps match the assignable broadcast frequencies and intervals in between.

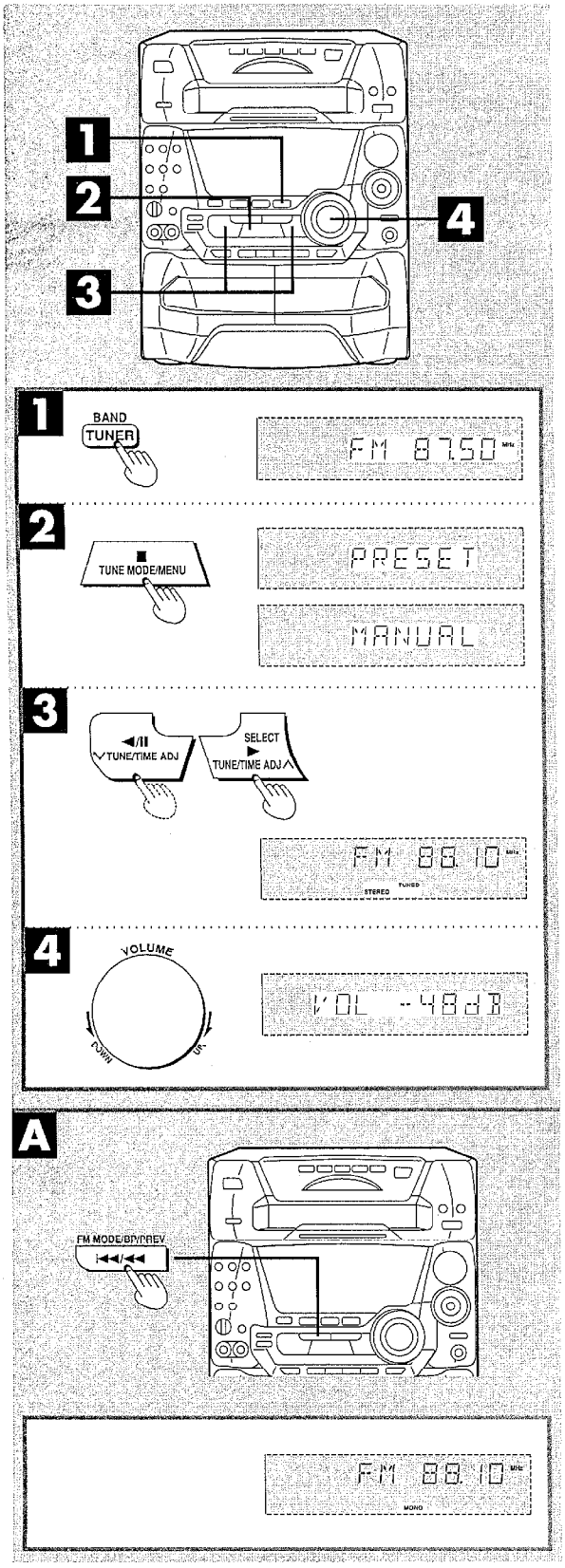
Each country allocates broadcast bands according to their particular needs.

By adjusting the allocation, you can enable the tuner to receive AM broadcasts allocated in 10 kHz steps.
Press and hold TUNER BAND. After a few seconds the display will change to a flashing display of the current minimum AM frequency.
If you continue to hold the button down, the minimum frequency will change. Release the button at this time.

To return to the original frequency indication, repeat above.

Note
After changing the "allocation" setting, the frequencies you previously preset in the memory will be cleared.

■ Listening to Radio Broadcasts



1 **Press TUNER BAND to select band.**
The power will come on automatically.
Every time you press the button: "FM" ↔ "AM ".

2 **Press TUNE MODE to select "PRESET" or "MANUAL".**
Every time you press the button: "MANUAL" ↔ "PRESET".

PRESET: For preset stations
MANUAL: For non-preset stations

3 **Press ∨ or ∧ to select the desired broadcast.**
"STEREO" lights when an FM stereo broadcast is being received.
"TUNED" lights when you precisely tune in a broadcast station.

4 **Adjust the volume level.**

Auto tuning

Auto tuning is an easy way to tune in non-preset stations in the manual mode.

Hold down either ∨ or ∧, and release the button when the frequency starts scrolling.
The frequency will stop scrolling automatically on the first station it picks up.

- When there is outside interference, the radio sometimes stops on a certain frequency where no station is broadcasting.

To stop auto tuning
Press either ∨ or ∧ again.

If noise is excessive in the FM stereo mode A

Press FM MODE/BP. ("MONO" will light up.)
Sound will be produced in monaural, but this also reduces noise.
Press the button again to cancel. "MONO" will go out.

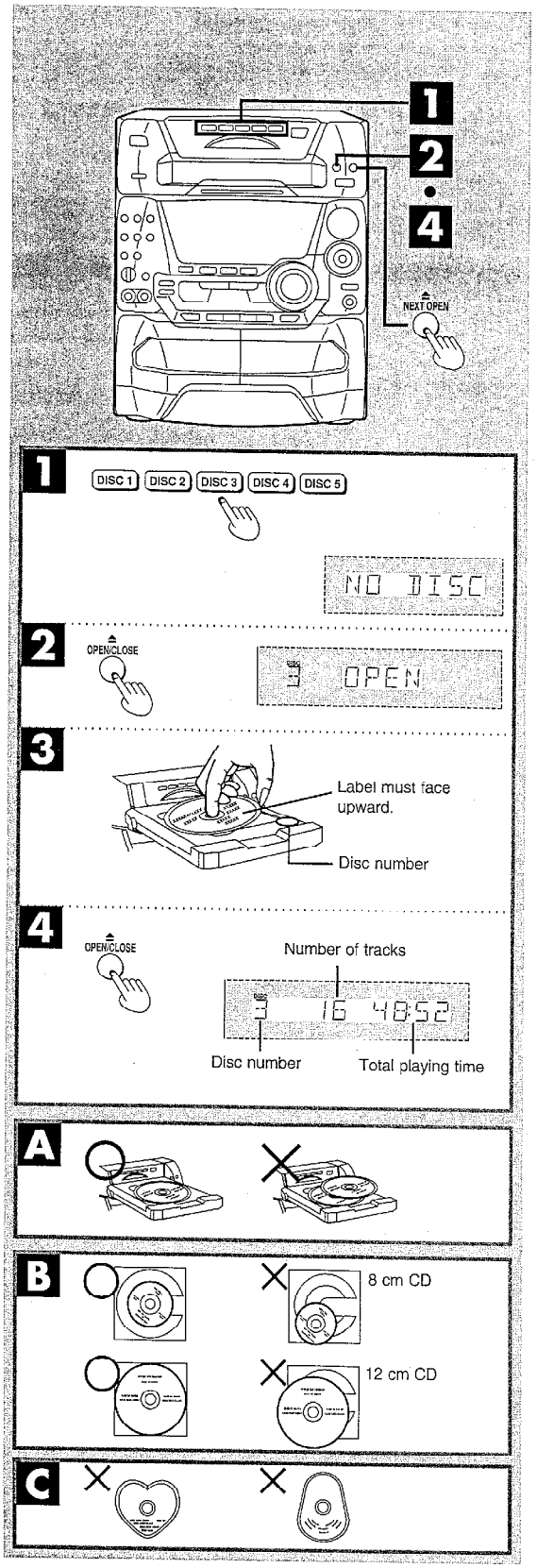
Normally, you'll want to listen in stereo, so leave "MONO" off. This way, you can listen to stereo broadcasts in stereo, and monaural broadcasts in mono.

You can preset an FM station in monaural by following the steps under "Presetting only your favourite stations". After selecting the station in step 1, select "MONO" with FM MODE/BP, then continue with steps 2 and 3.

Notes

- If you preset stations in memory, you can tune in a preset station by simply selecting the preset channel with the numeric buttons on the remote control.
  1. Press TUNER on the remote control.
  2. Press the numeric button(s) to select the desired preset channel.
     To select a two-digit channel:
     Press ≥10 and then the two numbers you want within 10 seconds or so.
- Sound is momentarily interrupted if you load/unload tapes while listening to an AM broadcast.

■ Loading and Checking CDs



Always stop the changer before loading or changing CDs. You cannot change CDs while a disc is playing.

How to load CDs

1 **Press DISC 1 - DISC 5, whichever you want to open.**
The power will come on automatically.

2 **Press ≜ OPEN/CLOSE.**
The selected tray will open.

3 **Set CD in the tray.**

4 **Press ≜ OPEN/CLOSE.**
The tray will close and the disc No. , number of tracks and total playing time will be shown on the display.

To load several CDs consecutively or to check which trays have discs
Press ≜ NEXT OPEN.
Every time you press the button, the next tray will open. After loading all the CDs you want, press ≜ OPEN/CLOSE to close the tray.

Disc indicators (DISC 1-DISC 5)

Disc indicators turn the following colours whether the tray is loaded or not.

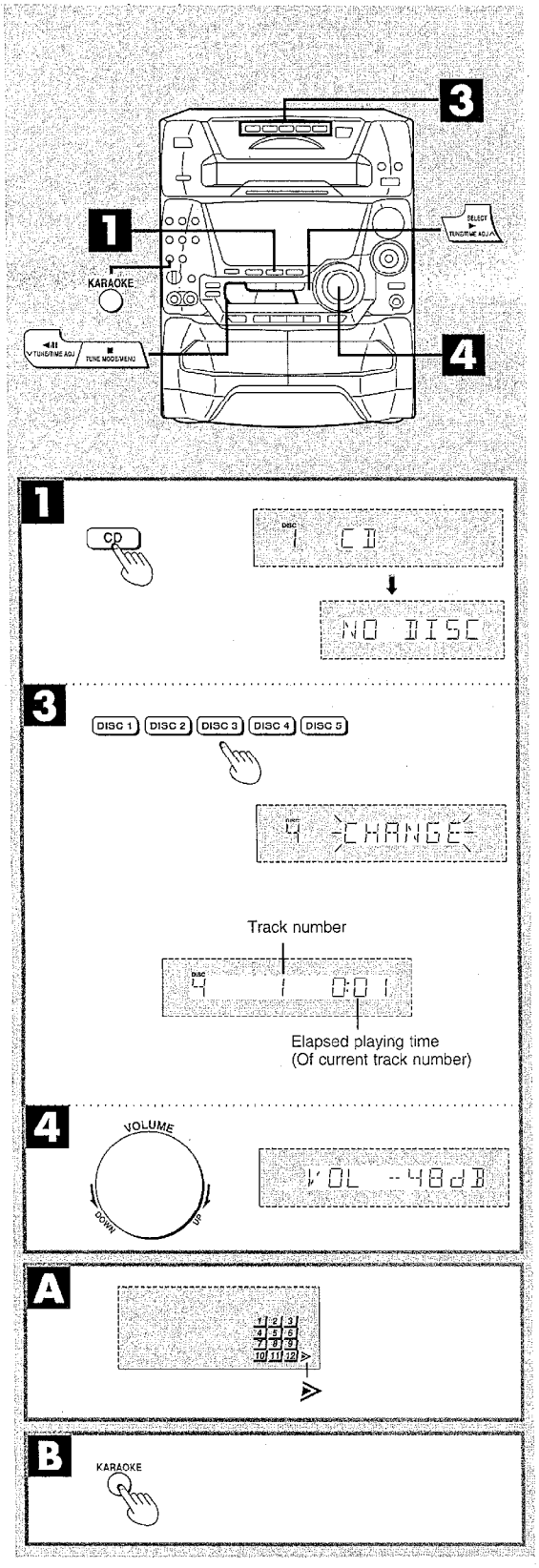
Green	When selected (When in the playing position)
Orange	In all other cases

To prevent damage

Always observe the following points:
- Load only 1 CD per tray. **A**
- Load CDs as shown in figure. **B**
  The adapter is not needed with 8 cm CDs (singles).
- Set the system on a flat, level surface.
  Do not set it on top of magazines, inclined surfaces, etc.
- Do not move the system while trays are opening/closing, or when loaded.
  Always unload all CDs and set the system to "shipping mode" (back cover) before moving the system.
- Do not put anything except CDs in trays.
- Do not use cleaning CDs or CDs which are badly warped or cracked.
- Do not use CDs with poorly attached labels or stickers.
  Adhesive protruding from underneath stickers or left over from peeled off stickers can cause your stereo to malfunction.
- Do not use irregular shape CDs. **C**

■ Playing Audio CDs and Video CDs (not equipped with the playback control function)

Normal playback



Sequential play

This playback method does not use the menu screen. This method can be used with video CDs equipped with PBC, but a portion of the animated or still screen may not be played.

Preparation (only with video CDs)
Turn the television on and select video input with the television input switch.

1 **Press CD.**
The power will come on automatically.

2 **Insert CDs in the trays.**

3 **Press DISC 1-DISC 5 to select the disc you want.**
Play will start from the first track on the disc shown on the display, and will continue until the last track of the final disc (see below) is played.

When you are playing video CDs equipped with PBC function, press MENU to indicate "MENU OFF", then press ►.

4 **Adjust the volume level.**

To stop the disc play
Press ■.

To temporarily stop the disc play
Press ❚❚ button.
To play again, press ►.

When " ⏵ " appears on the display A
It indicates there are 13 or more tracks on the disc at the playing position.

What is meant by "final disc"?
For example, if play starts from disc 4, disc 3 will be the "final disc".
Order of progression:
Disc 4→5→1→2→3

Playing a bilingual program on a video CD B
When playing a bilingual movie or other bilingual software, you can listen in either language.

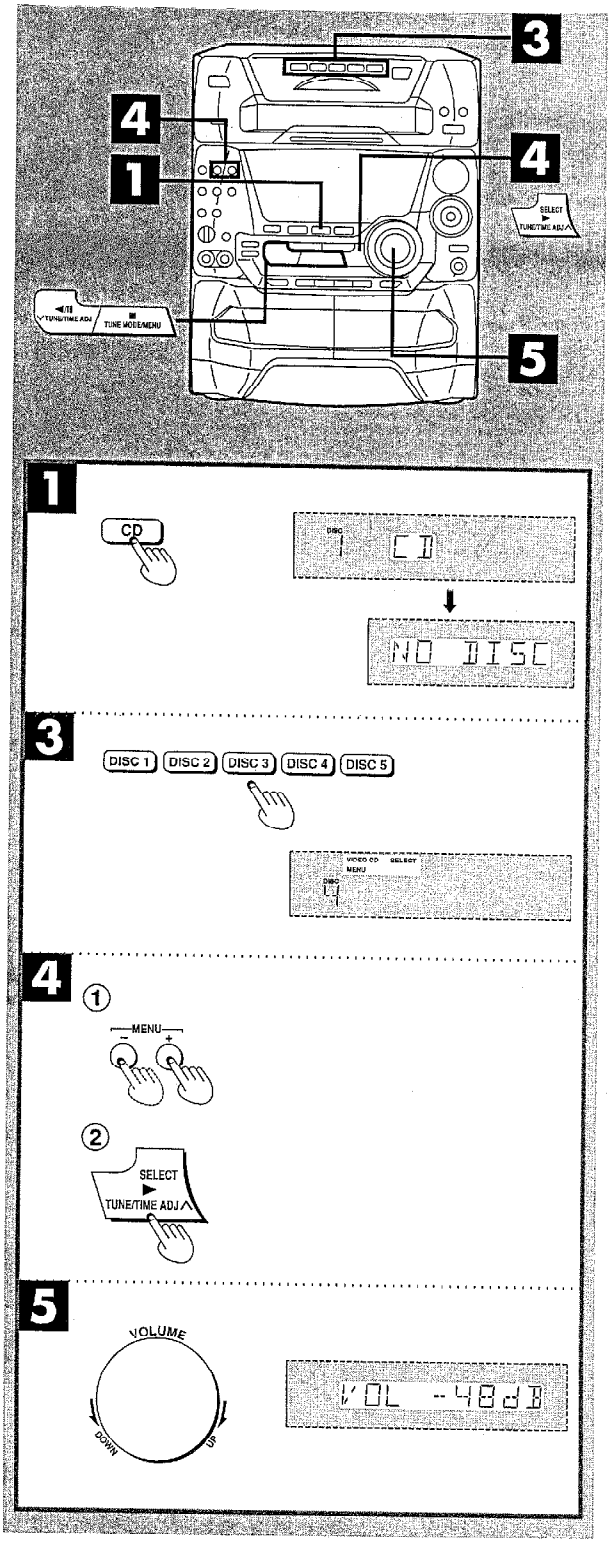
Press KARAOKE to select "MONO L" or "MONO R".

Every time you press the button:

V.MUTE → MONO L → MONO R
↑ ← Light off (OFF) ←

■ Playing Video CDs (with the playback control function)

Menu playback



The playback method described below is only for video CDs equipped with the playback control function. Menu playback is automatically played when a video CD is playback control supported. If the video CD is not playback control supported, refer to the normal playback mode.

Preparation:
Turn the television on, select video input with the television input switch.

1 **Press CD.**
The power will come on automatically.

2 **Insert CDs in the trays.**

3 **Press DISC 1-DISC 5 to select the disc you want.**
The menu screen appears on the TV (with some discs, it may not appear immediately). The menu screens that appear may differ depending on the disc.
Some software may display the menu screen after animated or still screens have been played.

4 **① Press + or – to select the menu item.**
+ : When selecting the bigger number
– : When selecting the smaller number
② Press SELECT, ► to start play.
A different menu is displayed or animated/still screens are played. High-precision still screens are also automatically distinguished and played.

5 **Adjust the volume level.**

To stop the disc play
Press ■.

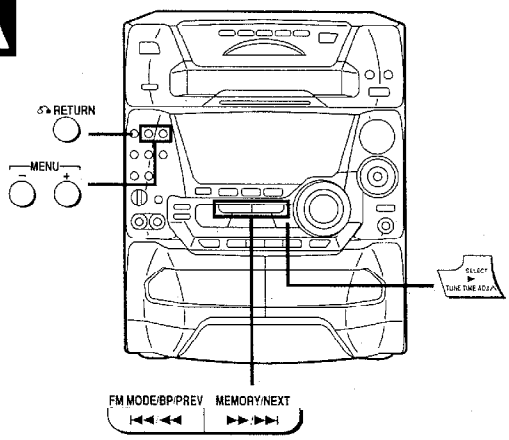
To temporarily stop the disc play
Press **II**.
To play again, press SELECT, ►.

Note
With some discs, the motion picture in the menu screen may not pause even when **II** is pressed during playback.

To switch to regular play mode
Press MENU in stop mode.
" MENU OFF " lights up.

■ Using the Menu Screen

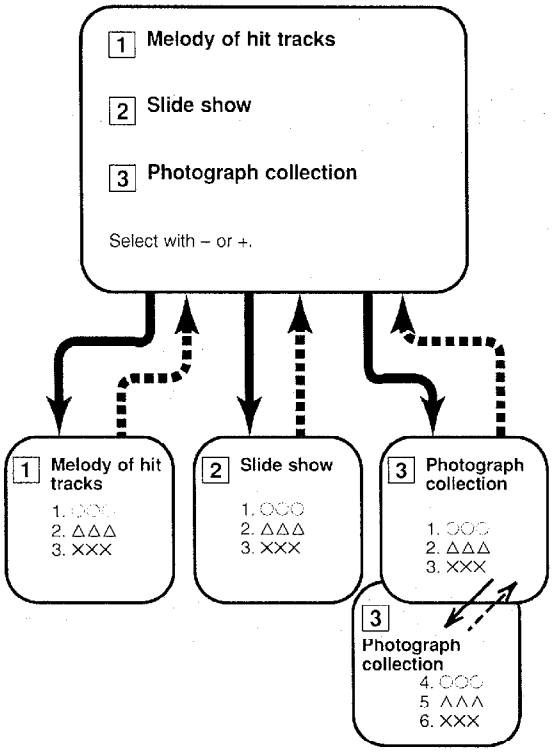
A



Press SELECT, ► to enter selection.

Press ↶ to return to the main menu.

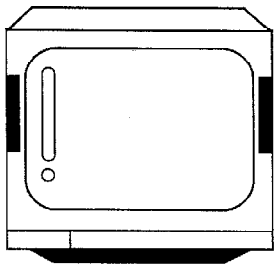
(Main menu screen)

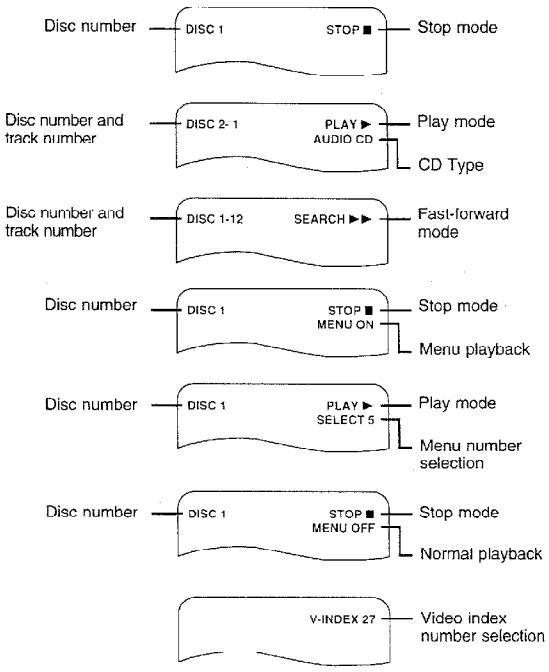


Press ▶▶/▶▶| NEXT to continue to the next menu.

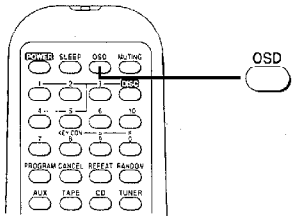
Press |◀◀/◀◀ PREV to return to the previous menu.

B

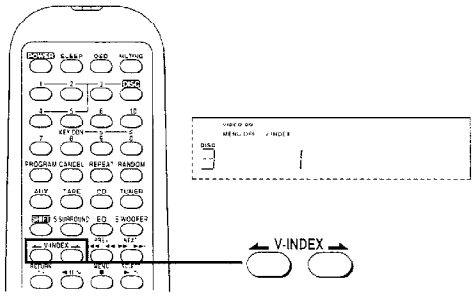




C



D



(Continued on next page)

Menu Screen Format A
Submenus and animated/still screens are constructed in levels, centering on the main menu.

When you go into the menu operation:
Confirm the menu screen is switched and then proceed to the next operation.

To select the menu number using the remote control:
To select 1-9, press the corresponding numeric button.
To select a two-digit number, press ≥10, and then press the numeric button corresponding to the desired menu number.
For example:
Menu 10: ≥10 →1→0
Menu 25: ≥10 →2→5

Notes

- Menu playback and normal playback is switched automatically depending on the disc loaded. When you want to make a normal playback with a playback control supported disc, first press MENU to switch to the normal playback mode.
- With some discs, the motion picture in the menu screen may not pause even when ❚❚ is pressed during playback.

Television OSD indicators (On Screen Display)

by remote control only

OSD (On Screen Display) is a function displaying the CD operation or mode on a television set in letters or icons. The OSD indicators also provide helpful display information for music CDs.

The display disappears within a few seconds. Main OSD indicators are described on the left. B

When OSD indicators are unnecessary: C
Press OSD on the remote controller.
OSD indicators are not displayed.

To cancel, press OSD again.
OSD indicators are displayed again.

For your reference:
OSD indicators differ depending on video CD software.

To find a particular scene using a video index number

by remote control only **for video CD only** **normal playback only**

A particular scene in a track you want to watch can be located by selecting a video index number.
Check the user's manual or other material for information on whether video CD software contains video index numbers.

Preparation:
When you are playing video CDs equipped with PBC function, press MENU to indicate "MENU OFF".

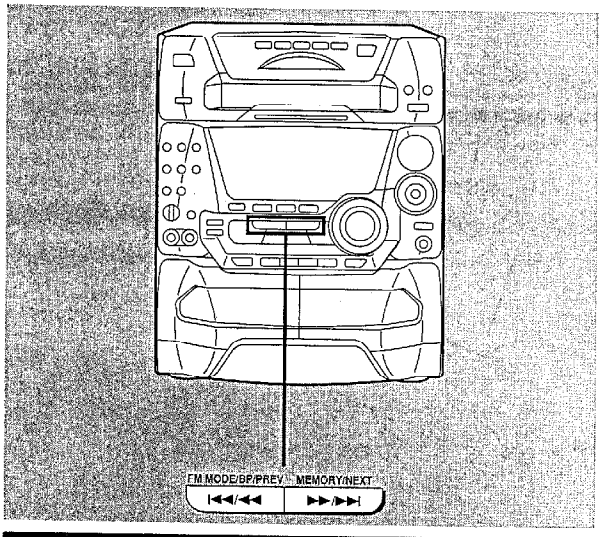
Press V-INDEX (▲ or ▲) in the play or pause mode to select the video index number. D
Play starts at the video index selected.

Notes

- The video index search function is available with a track in play only.
- With some discs, it may not be possible to make a video index search with the motion picture.

For your reference:
Some video CD software may return to the menu screen when the video index is searched during menu playback operation.

■ Various CD Playback



To skip forward/backward

Press I◄◄/◄◄ (backward) or ►►/►►I (forward) during playback.

Notes

- During random play, you cannot skip to tracks which have already been played.
- During program play, skipping is always in the programmed order, whether forward or backward.

To search forward/backward

Hold down I◄◄/◄◄ (backward) or ►►/►►I (forward) during playback.

Notes

- During program play or random play, you can search forward or backward only within the current track.
- You cannot search forward or backward with some "slide show" discs.
- There might be no audio output while searching during video CD menu playback.
- There are some discs which have tracks constructed only with audio signal.
  If the system finds out the track which is constructed only with audio signal while searching, the search operation will be automatically switched to start playing the track. When you want to search continuously, release the button once, and then press and hold the button until the desired track is reached.

To search forward/backward with high speed

for video CD only

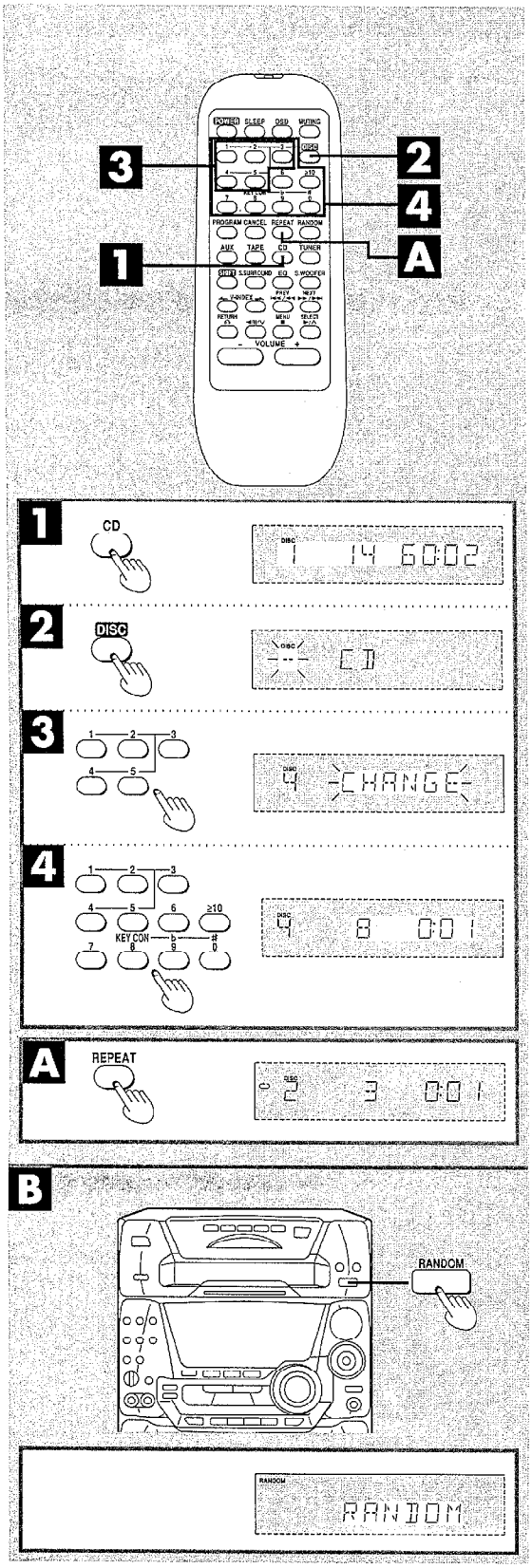
While checking the elapsed play time displayed on the main unit, you can search forward or backward with high speed.

Hold down I◄◄/◄◄ (backward) or ►►/►►I (forward) in pause mode.

The play will automatically start when you release the button.

Notes

- The TV screen enters pause mode.
- There is no audio output during search operations.



Direct access play — normal playback only

by remote control only

1 **Press CD.**

2 **Press DISC.**

3 **(within 10 seconds or so)**
Press 1–5 to select the disc you want.
When you are playing video CDs equipped with PBC function, press MENU to indicate "MENU OFF".

4 **Press the numeric button to select the desired track number.**
The CD will be played from the selected track to the last track of the final disc.

To select a two-digit track
Press ≥10 and then the two numbers you want within 10 seconds or so.
For example
Track no. 20: ≥10→2→0
Track no. 35: ≥10→3→5

Repeat play — normal playback only

by remote control only

When you playback video CDs equipped with the PBC function, MENU turns MENU OFF automatically.

Press REPEAT before or during play. A
All tracks on the loaded CDs are repeated.

To cancel repeat play
Press REPEAT once again.

To repeat your favourite tracks
1. Program the track you want.
2. Press REPEAT and make sure "↻" is displayed.
3. Press ►. Playback will start.

To repeat just one track
Set the 1-TRACK mode, press REPEAT before or during playback, and make sure "↻" is displayed.

Random play — normal playback only

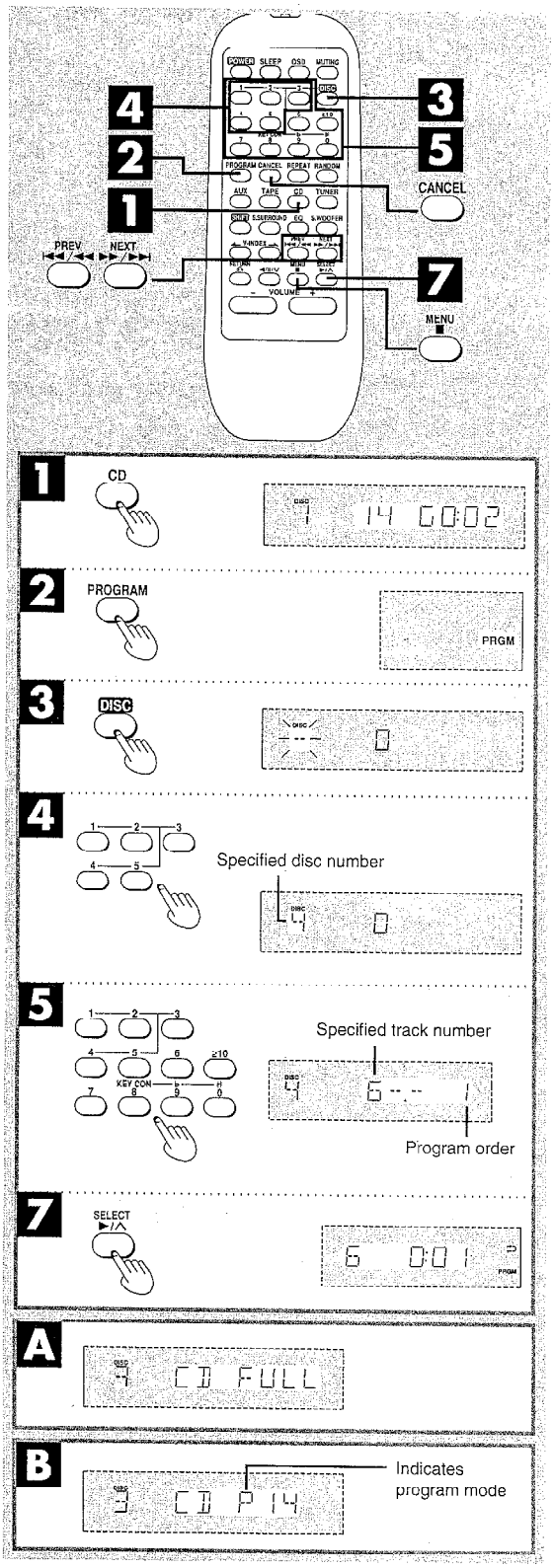
When you playback video CDs equipped with the PBC function, MENU turns MENU OFF automatically.

Press RANDOM. B
All tracks on the loaded CD will be played in random order. Playback will stop automatically when all tracks have been played.

To cancel random play
Press RANDOM once again.

Note

You can use random play with your program. Only the programmed tracks will be played, but in random order.



Program play — normal playback only

by remote control only

When you playback video CDs equipped with the PBC function, MENU turns MENU OFF automatically.

You can program up to 24 tracks.

1 Press CD.
Ensure CD is stopped.

2 Press PROGRAM.

3 Press DISC.

4 (within 10 seconds or so)
Press 1–5 to select the disc you want.

5 Press the numeric button to select the desired track.

6 Repeat steps 3 through 5 until you have programmed all the tracks you want.

7 Press ►/∧.
Play will start in the programmed sequence.

To cancel program play mode
Press PROGRAM in the stop mode.
Programmed contents will be saved in memory.
Pressing ■ will cancel program play, but it will also erase the entire program.

To select a two-digit track
Press ≥10 and then the two numbers you want.
For example
Track no. 20: ≥10→2→0
Track no. 35: ≥10→3→5

When "CD FULL" appears A
The number of programmed tracks is limited to 24. No further tracks can be programmed.

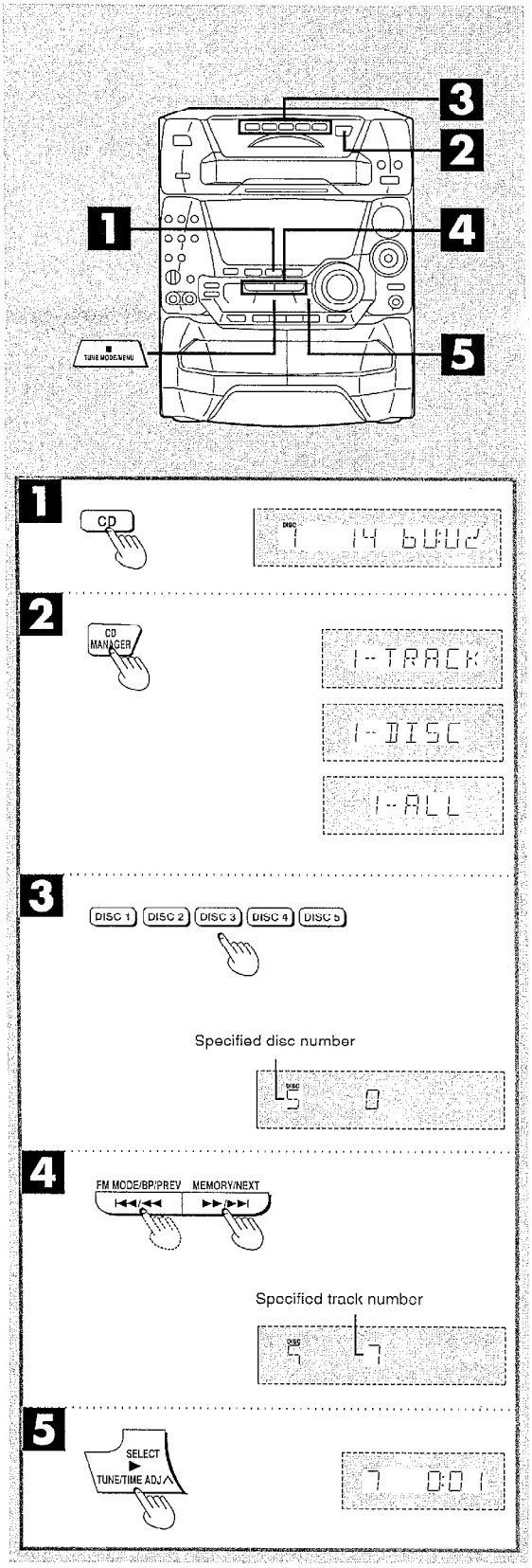
You can do the following during program mode B
- Check program contents.
  Press I◄◄/◄◄ or ►►/►►I.
  Every time you press one of the buttons, the track and program No. are shown on the display.
- Add to the program.
  Repeat steps 3 through 5.
- Cancel entries.

From the last programmed track	Press CANCEL.
A specified track only	Select the track with I◄◄/◄◄ or ►►/►►I, and press CANCEL within 3 seconds.
All tracks	Press ■.

Memory retention
Your program is retained in memory for about 2 weeks while the system is unplugged.

To replay your program
If you turned OFF your program with PROGRAM, you can play it again as explained below.
1. Press PROGRAM.
2. Press ►/∧.

If you program a track not on your CDs
The track is initially programmed, but during program play, the player will skip that track and will continue playing from the next programmed item.



To listen to special CDs and tracks (CD Manager function) normal playback only

This function makes it easier for you to select special CDs and tracks from amongst those loaded in the player.

You can use this function to make recordings as well.

There are 3 CD/track selection modes.

- For playing back 1 track only from all loaded CDs
  1-Track mode (1-TRACK)
- For playing back 1 CD only from all loaded CDs
  1-Disc mode (1-DISC)
- For playing back 1 track on all loaded CDs
  1-Track All-Disc mode (1-ALL)

When you playback video CDs equipped with the PBC function, MENU turns MENU OFF automatically.

1 **Press CD.**
Ensure CD is stopped.

2 **Press CD MANAGER to select the desired mode.**
Every time you press the button:

1-TRACK → 1-DISC → 1-ALL
↑ NORMAL (OFF) ←

1-TRACK: Only one particular track is played.
1-DISC: The tracks on only one particular disc are played.
1-ALL: The same track numbers on each of the CDs are played in succession.
(NORMAL: The original display is restored in about 3 seconds.)

3 **Press DISC 1–DISC 5 to select the disc you want.**
Note
This step is not required if 1-ALL was selected in step **2**.

4 **Press ⏮/◀◀ or ▶▶/⏭ to select the desired track.**
Note
This step is not required if 1-DISC was selected in step **2**.

5 **Press ▶.**
The selected track will start.

To stop play
Press ■.

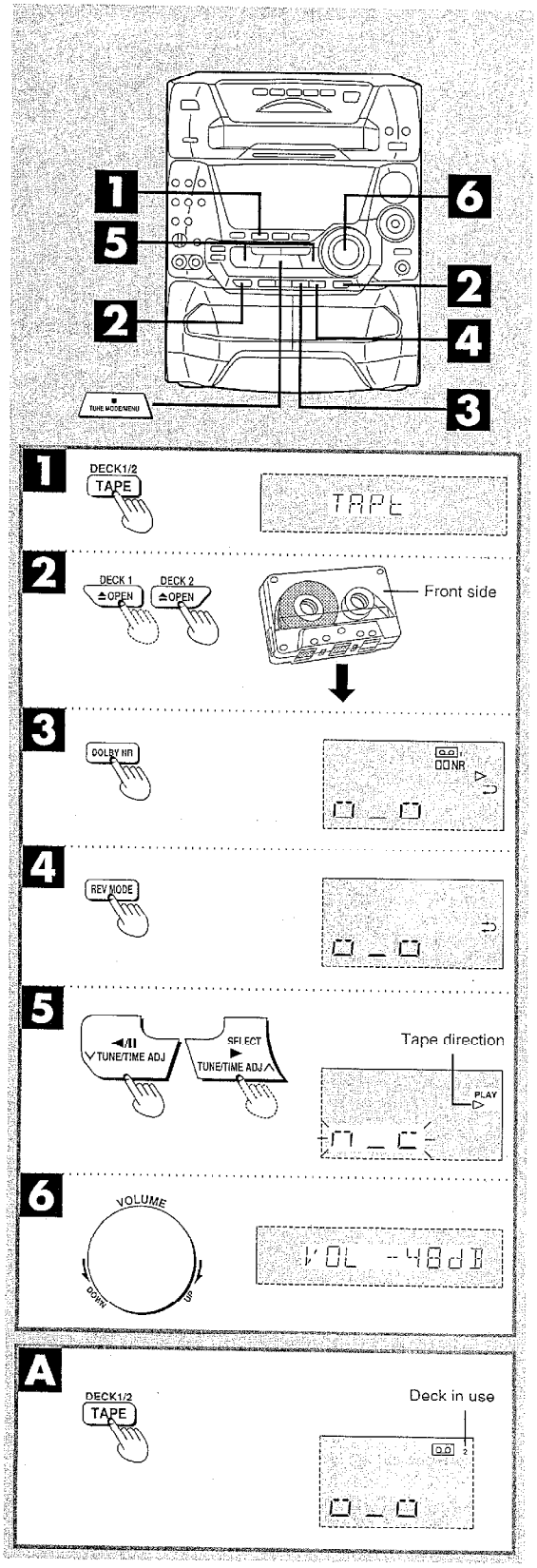
When playback ends
"NORMAL" will appear on the display for about 3 seconds, then the CD MANAGER function will turn OFF automatically.

During play in the 1-ALL mode:

- It is not possible to skip back to a CD whose track has already been played.
- If a CD does not have the designated track number, it is skipped and play continues.

Note
You can use the repeat function and random play at the same time. However, in 1-TRACK mode, random play is not available.

■ Listening to Tapes



Type of tape which can be played correctly:
The unit automatically identifies the type of tape.

NORMAL POSITION/TYPE I	○
HIGH POSITION/TYPE II	○
METAL POSITION/TYPE IV	○

You can use either deck 1 or deck 2 for tape playback.

1 **Press TAPE.**
The power will come on automatically.

2 **Press ≜ OPEN DECK 1 or ≜ OPEN DECK 2 and insert the tape.**
Insert the tape with the exposed tape facing down.
Close the holder by hand.

3 **Press DOLBY NR.**
You have to turn DOLBY NR ON/OFF according to the type of recording you made.
Every time you press the button: DOLBY NR → (OFF)

4 **Press REV MODE to select the reverse mode.**
Every time you press the button:
⇄ → ⇉ → ↻
⇄ : One side is played, then playback stops automatically.
⇉ : Both sides (front side → reverse side) are played one time each, then playback stops automatically.
↻ : Both sides are played 8 times each, then playback stops automatically.

5 **Press ◄ or ► to start playback.**
► : The forward side (front side) will play.
◄ : The reverse side will play.

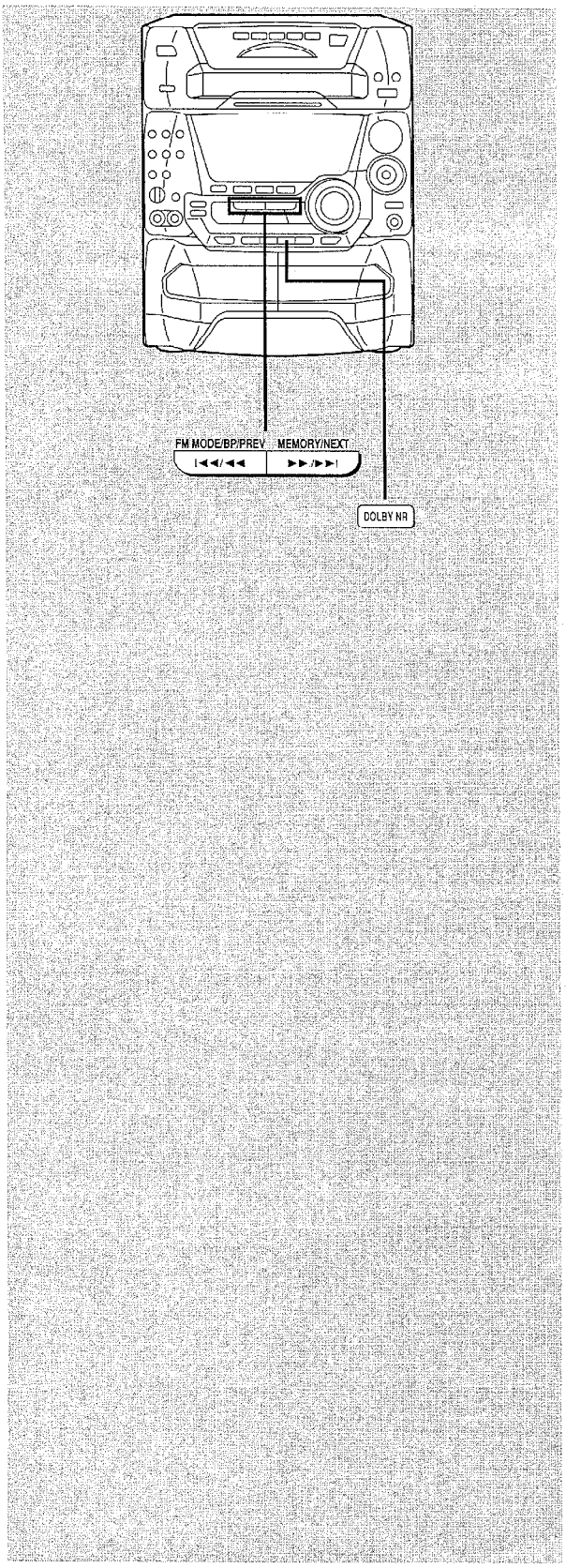
6 **Adjust the volume level.**

To stop tape playback
Press ■.

To change the deck to be used A
Press TAPE DECK1/2 to select the deck you want to use when you load cassettes into both decks.

To listen to 2 tapes consecutively
Load a tape into each deck and select "↻". Both tapes will be played 8 times each.

Note
Playback is momentarily interrupted while playing back tapes, if you open the other deck.



To fast-forward or rewind the tape

Press I◄◄/◄◄ or ►►/►►I in the stop mode.

Tape direction	To rewind	To fast-forward
"▷"	I◄◄/◄◄	►►/►►I
"◁"	►►/►►I	I◄◄/◄◄

To find the beginning of a program (TPS: Tape Program Sensor)

Press I◄◄/◄◄ or ►►/►►I during play.

Tape direction	To play the current tune from the beginning	To play the next tune from the beginning
"▷"	I◄◄/◄◄	►►/►►I
"◁"	►►/►►I	I◄◄/◄◄

Notes

The TPS function searches for silent parts of about 4 seconds in length which are normally found between tunes. As a result, it may not function properly in the following cases

- With short silent parts
- When noise occurs between tunes
- With silent parts found within tunes

About the Dolby noise-reduction system

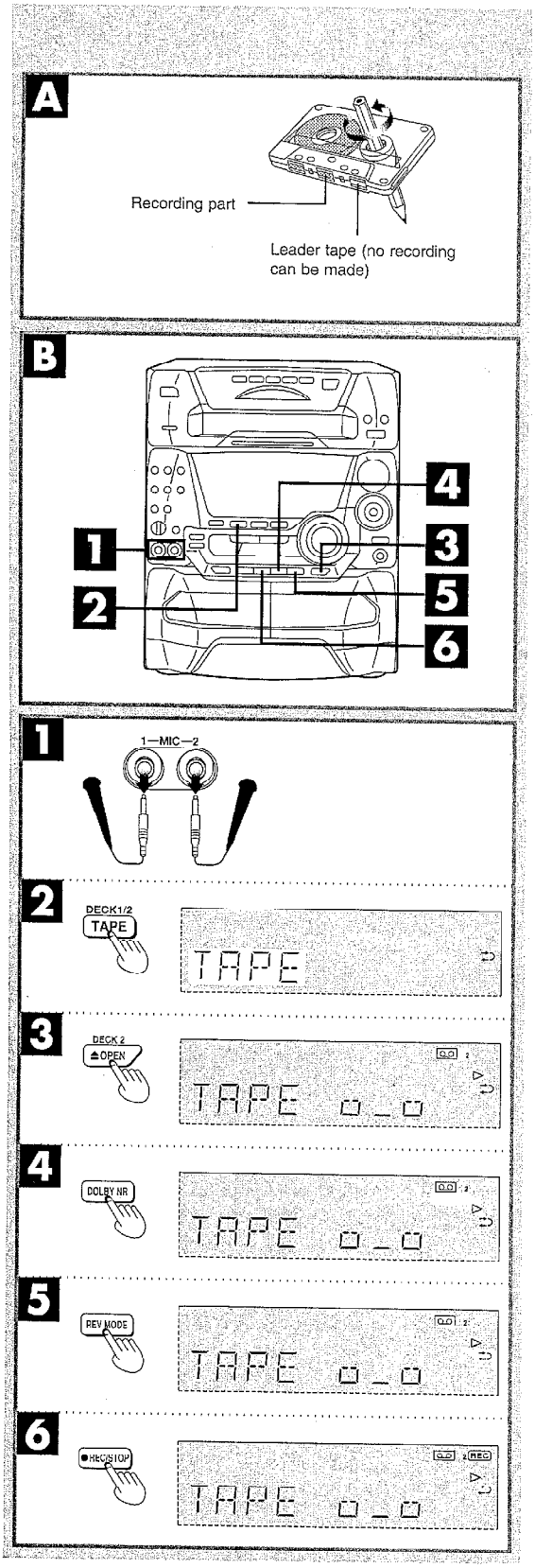
The Dolby noise-reduction system is designed to effectively reduce the annoying high-frequency "hissing" noise typical of cassette tapes. During recording, the system functions to increase the high-frequency sound level, and then, during playback, that same portion is weakened to bring it back to the previous level.
The DOLBY NR effect is obtained by selecting the same type of Dolby during playback as was used during recording.

This unit includes the Dolby B NR-type.

Dolby B NR-type
Noise is reduced to about one-third.

Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"DOLBY" and the double-D symbol ⧈ are trademarks of Dolby Laboratories Licensing Corporation.

■ Before Recording (Deck 2 only)



Types of tapes which can be recorded correctly

The unit automatically identifies the type of tape.

NORMAL POSITION/TYPE I	○
HIGH POSITION/TYPE II	○
METAL POSITION/TYPE IV	×

This system cannot make a recording or erasing correctly, if metal position tapes are used.

To record from the beginning of the tape A

You cannot record on the leader part of the tape. Before recording, wind the tape past the leader to a point where recording can start immediately.

How volume, sound quality/field and super woofer affect recording

The tape you are recording is not affected whatsoever by changes in volume, sound quality/field or super woofer.

- In recording, sound quality/field are set automatically to "FLAT".
- You can change volume and super woofer effect for the playback sound.

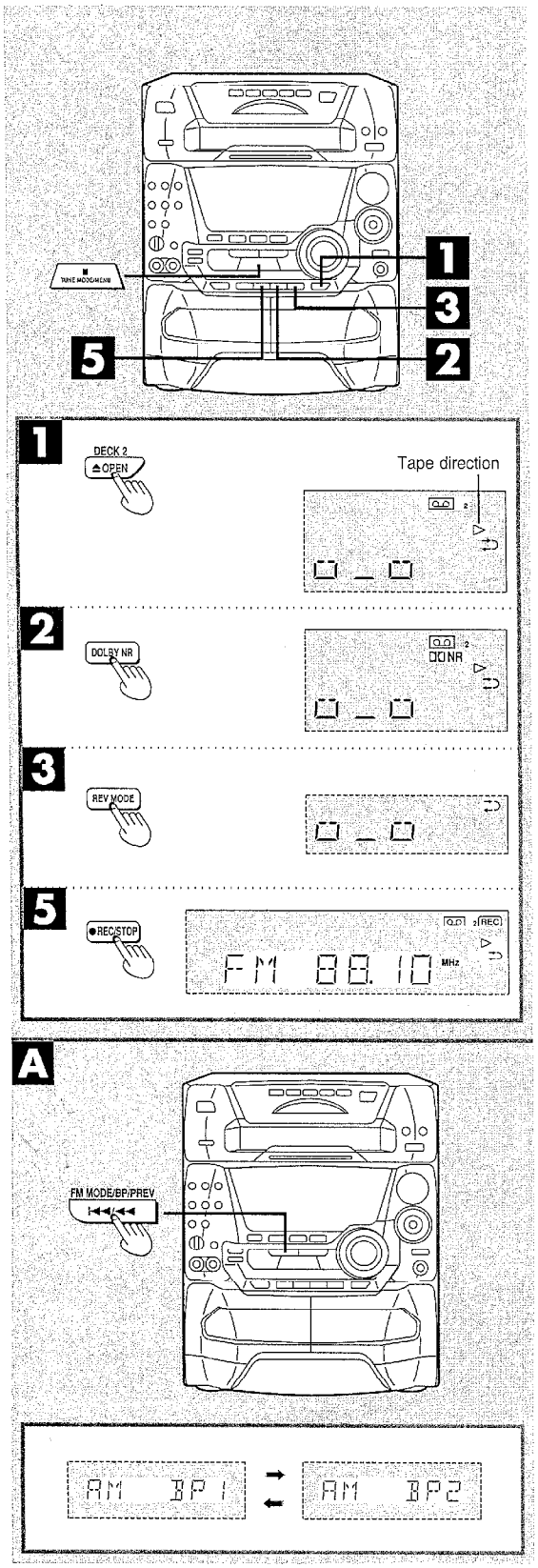
To erase a recorded sound B

1. Disconnect the microphones.
2. Press TAPE.
3. Insert the recorded tape into deck 2.
4. Press DOLBY NR so that the Dolby NR indicator goes off.
5. Press REV MODE to select reverse mode.
6. Press ● REC/STOP.

Notes

- You cannot open deck 1 while recording.
- You cannot fast-forward or rewind one deck while recording with the other.

■ Recording from Radio Broadcasts



1 **Press ≜ OPEN DECK 2 and insert the tape.**
Close the holder by hand.
Tape direction is automatically set to "▷".

2 **Press DOLBY NR.**
You have to turn Dolby NR ON/OFF according to the type of recording you want to make.
Every time you press the button: □□NR → (OFF)

3 **Press REV MODE to select the reverse mode.**
Every time you press the button:
⇄ → ⇉ → ⟳⇉

⇄ : One side is recorded, then recording stops automatically.
⇉, ⟳⇉ : Both sides (front side → reverse side) are recorded, then recording stops automatically.

4 **Select a radio station. Perform steps 1 through 3.**

5 **Press ● REC/STOP to start recording.**
If you selected ⟳⇉ in step 3, the direction will automatically change to ⇉ when recording starts.

To stop recording
Press ● REC/STOP again.
Recording can also be stopped by pressing ■.

To start recording on the reverse side
Load a tape and change the tape direction as following.
1. Press TAPE DECK1/2 and select tape deck 2.
2. Press ◄ and immediately thereafter ■. The tape direction will be shown as "◁".

To record from a specific point on a tape
Before recording, advance the tape to the point from where you want to start recording.

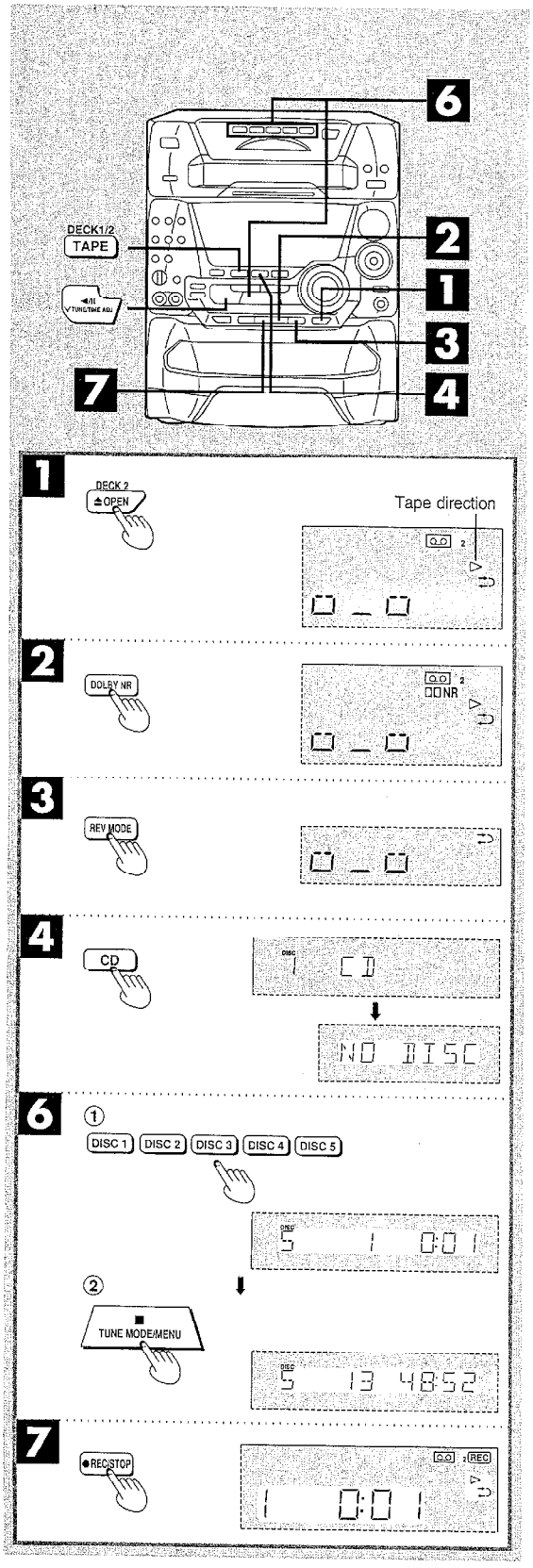
To cut an unnecessary part while recording
1. Press ● REC/STOP during the unnecessary part. The cassette deck will go into the stop mode.
2. Press ● REC/STOP to resume recording again. Recording will continue in the same direction as before.

Note
When recording an AM broadcast, sound is momentarily interrupted when you start and stop the recording.

To reduce noise while AM recording (Beat proof function) A

Press FM MODE/BP while recording.
Each time you press the button, "BP1" and "BP2" will be displayed alternately.
Select the position where there is less noise.

■ Recording from Compact Discs



1 **Press ≜ OPEN DECK 2 and insert the tape.**
Close the holder by hand.
Tape direction is automatically set to "▷".

2 **Press DOLBY NR.**
You have to turn Dolby NR ON/OFF according to the type of recording you want to make.
Every time you press the button: □□NR → (OFF)

3 **Press REV MODE to select the reverse mode.**
Every time you press the button:

: One side is recorded, then recording stops automatically.
: Both sides (front side → reverse side) are recorded, then recording stops automatically.

4 **Press CD.**

5 **Insert CDs in the trays.**

6 **Press DISC 1 – DISC 5 to select the disc you want.**
Pressing ■ will stop playback.

7 **Press ● REC/STOP to start recording.**
- If you selected in step **3**, the direction will automatically change to when recording starts.
- The recording will proceed from the first track on the selected CD and will continue on through the last track of the final disc.
- The tape deck stops automatically when the CD is finished.

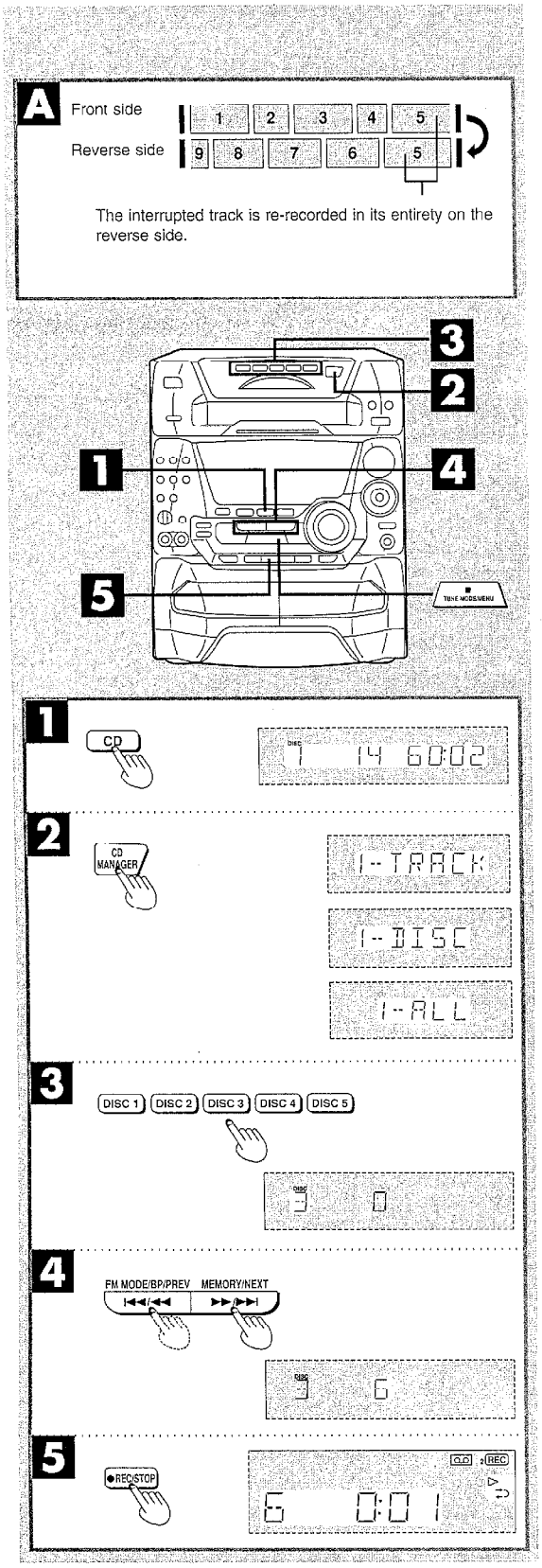
To stop recording
- To add a 4 second silent interval before stopping
  Press ■. The CD will stop automatically too.
- To stop recording without a silent interval
  Press ● REC/STOP. The CD will stop automatically too.

To start recording on the reverse side
Load a tape and change the tape direction as following.
1. Press TAPE DECK1/2 and select tape deck 2.
2. Press ◀ and immediately thereafter ■. The tape direction will be shown as "◁".

To record from a specific point on a tape
Before recording, advance the tape to the point from where you want to start recording.

To record programmed tracks

1. After step **5**, program the track you want.
2. Press ● REC/STOP to start recording.



To record special CDs and tracks (CD Manager function) normal playback only

This function makes it easier for you to select special CDs and tracks from amongst those loaded in the player.

- While recording, if a track is cut off in the middle at the end of the front side, it is re-recorded from the beginning, on the reverse side. A
- At the end of the reverse side recording stops and the current track will be interrupted.

When you playback video CDs equipped with the PBC function, MENU turns MENU OFF automatically.

Before recording

Prepare the tape you want to use. Performs steps 1 through 2 on page 26.

1 Press CD.

2 Press CD MANAGER to select the desired mode.

Every time you press the button:

1-TRACK → 1-DISC → 1-ALL
↑ NORMAL ← (OFF)

1-TRACK: Only one particular track is recorded.
1-DISC: The tracks on only one particular disc are recorded.
1-ALL: The same track numbers on each of the CDs are recorded in succession.
(NORMAL: The original display is restored in about 3 seconds.)

3 Press DISC 1–DISC 5 to select the disc you want.

Note
This step is not required if 1-ALL was selected in step 2.

4 Press ⏮/◀◀ or ▶▶/⏭ to select the desired track.

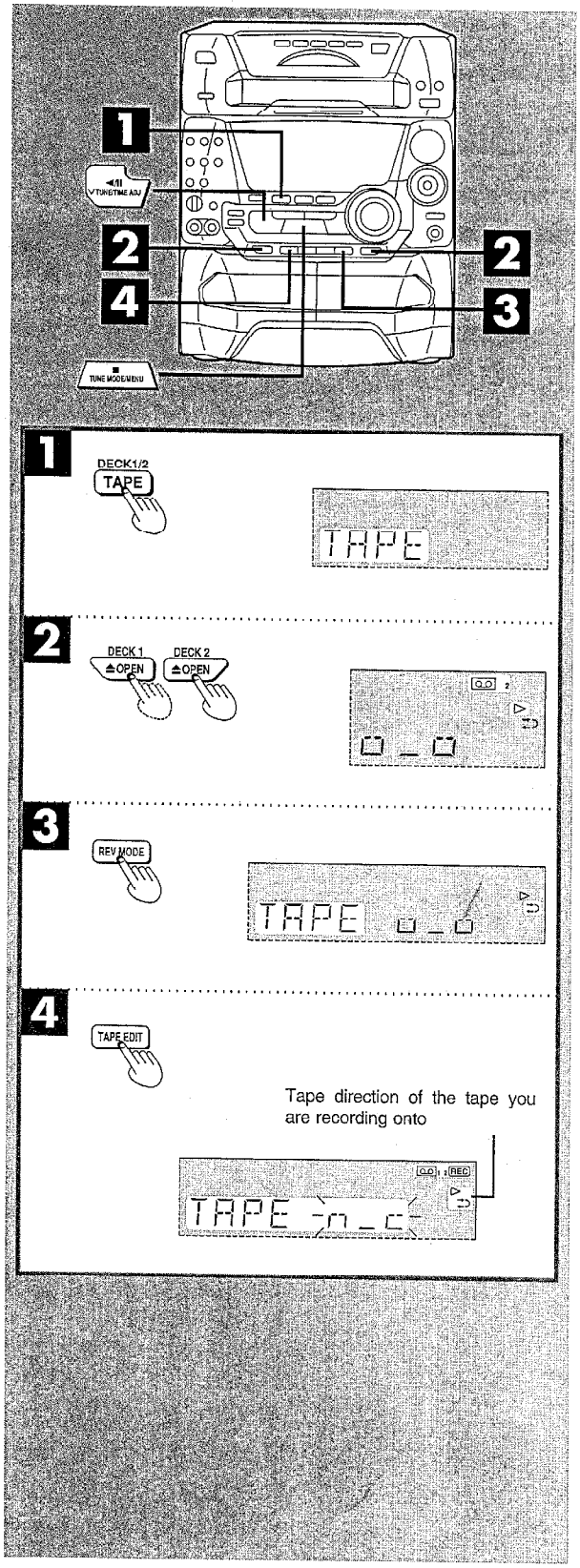
Note
This step is not required if 1-DISC was selected in step 2.

5 Press ● REC/STOP to start recording.

To stop recording

- To add a 4 second silent interval before stopping
  Press ■. The CD will automatically stop too.
- To stop recording without a silent interval
  Press ● REC/STOP. The CD will stop automatically too.

■ Tape-to-tape Recording



The recording level and the Dolby effect will be recorded as they are on the tape being played back.

1 **Press TAPE.**

2 **Press ≜ OPEN on both decks and insert the tapes.**
For playback: Into deck 1
For recording: Into deck 2
Close the holders by hand.
Tape direction is automatically set to "▷".

3 **Press REV MODE to select the reverse mode.**
Every time you press the button:

⇄ → ⇉ → ⇆

⇄ : One side is recorded, then recording stops automatically.

⇉, ⇆ : Both sides (front side → reverse side) are recorded, then recording stops automatically.

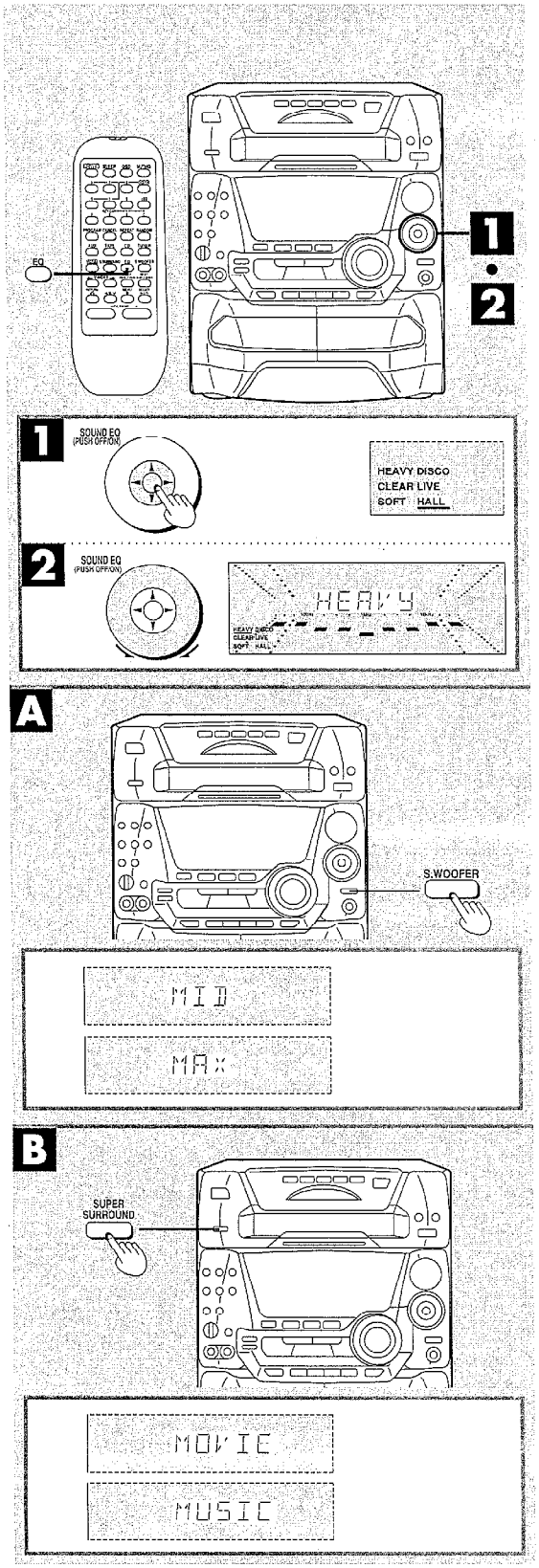
4 **Press TAPE EDIT to start recording.**
- If you selected ⇆ in step **3**, the direction will automatically change to ⇉ when recording starts.

To stop recording:
Press ■.
Both decks will stop.

To start recording on the reverse side
Load a tape and change the tape direction as following.
1. Press TAPE DECK1/2 and select tape deck 2.
2. Press ◀ and immediately thereafter ■. The tape direction will be shown as "◁".

To record from a specific point on a tape
Before recording, advance the tape to the point from where you want to start recording.

■ Using the Built-in Sound Quality/Sound Field Settings



1 **Press SOUND EQ joystick to turn on the equalizer.**
The SOUND EQ lamp lights more brightly, and "FLAT" is cleared.

2 **Dial SOUND EQ to select the sound quality or sound field.**
When it is turned clockwise, the settings are selected in the following sequence.

① **HEAVY (sound quality)**
Select this when playing rock or other kinds of music that sound better with an added punch.

② **CLEAR (sound quality)**
Select this for jazz or other kinds of music for which clarity in the treble range is desired.

③ **SOFT (sound quality)**
Select this when listening to background music.

④ **DISCO (sound field)**
Select this to produce sound with the same kind of lengthy reverberations heard at a disco.

⑤ **LIVE (sound field)**
Select this to make vocals more alive.

⑥ **HALL (sound field)**
Select this to add an expansiveness to the sound to produce the atmosphere of a great concert hall.

⑦ **MANUAL**

⑧ **AI EQ**

The original display is restored on the display panel in about 5 seconds. The sound quality/sound field setting can be changed as long as the SOUND EQ is on.

To release the equalizer
Press SOUND EQ joystick so that "FLAT" is displayed.

When using the remote control to perform the operations described above
Press EQ.
Each time this button is pressed, the setting is changed in the sequence given in step **2**. Note that after "MANUAL" is displayed, "FLAT" is selected.

Boosting the super woofer A

Press S.WOOFER.

- When listening to the sound through the speakers

  MID (medium) → MAX (high) → Light off (OFF)

- When listening to the sound through the headphones

  Light on (ON) ⇄ Light off (OFF)

Note

All recordings are performed at the flat setting even if an alternative sound quality/sound field setting has been selected and the super woofer effect is set to ON.

Enjoying sound with super surround B

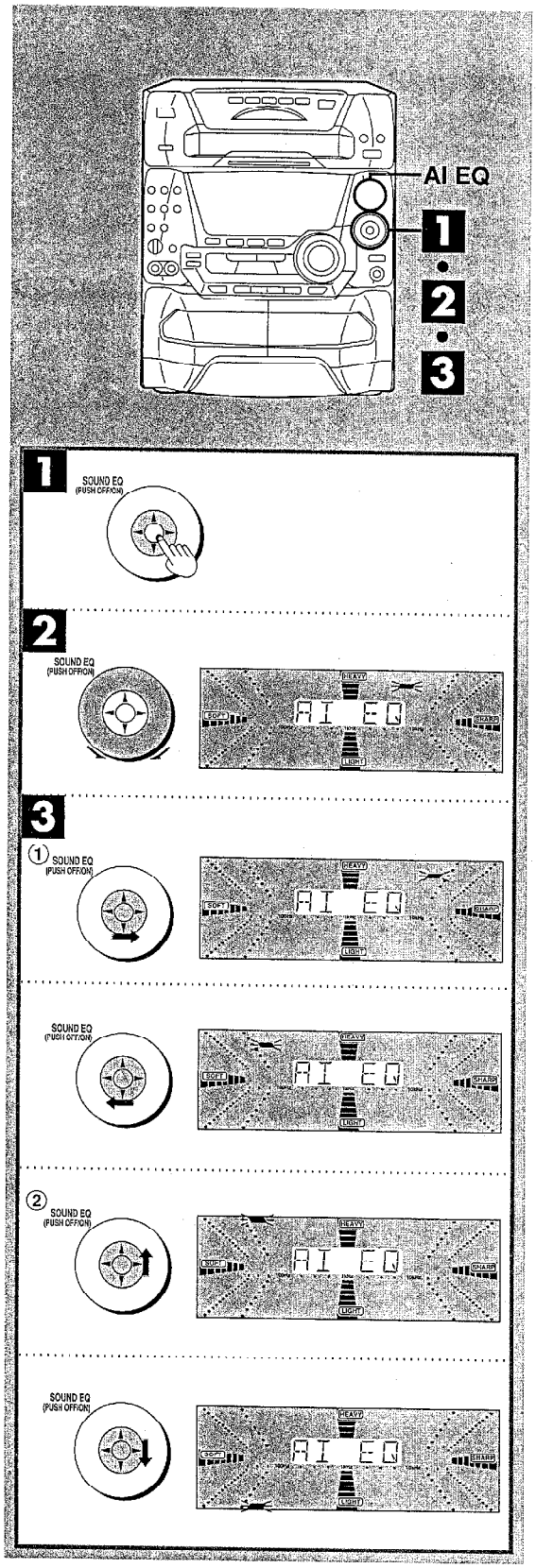
Press SUPER SURROUND.
Every time you press the button:

MOVIE → MUSIC
↑ NORMAL ←

Notes

- All recordings are performed at the flat setting even if an alternative sound quality/sound field setting has been selected and the super surround effect is set to ON.
- When listening to the sound through the headphones, the super surround function will be set to off.

■ Varying the Sound Quality with the Acoustic Image (AI) Equalizer



The AI equalizer uses the SOFT, SHARP, HEAVY and LIGHT sound quality coordinates to achieve subtle sound quality settings with ease.

1 **Press SOUND EQ joystick to turn on the equalizer.**
The SOUND EQ lamp lights more brightly, and "FLAT" is cleared.

2 **Dial SOUND EQ to display "AI EQ".**
When it is turned clockwise, the settings are selected in the following sequence.
① HEAVY ←
② CLEAR
③ SOFT
④ DISCO
⑤ LIVE
⑥ HALL
⑦ MANUAL
⑧ **AI EQ** ┘

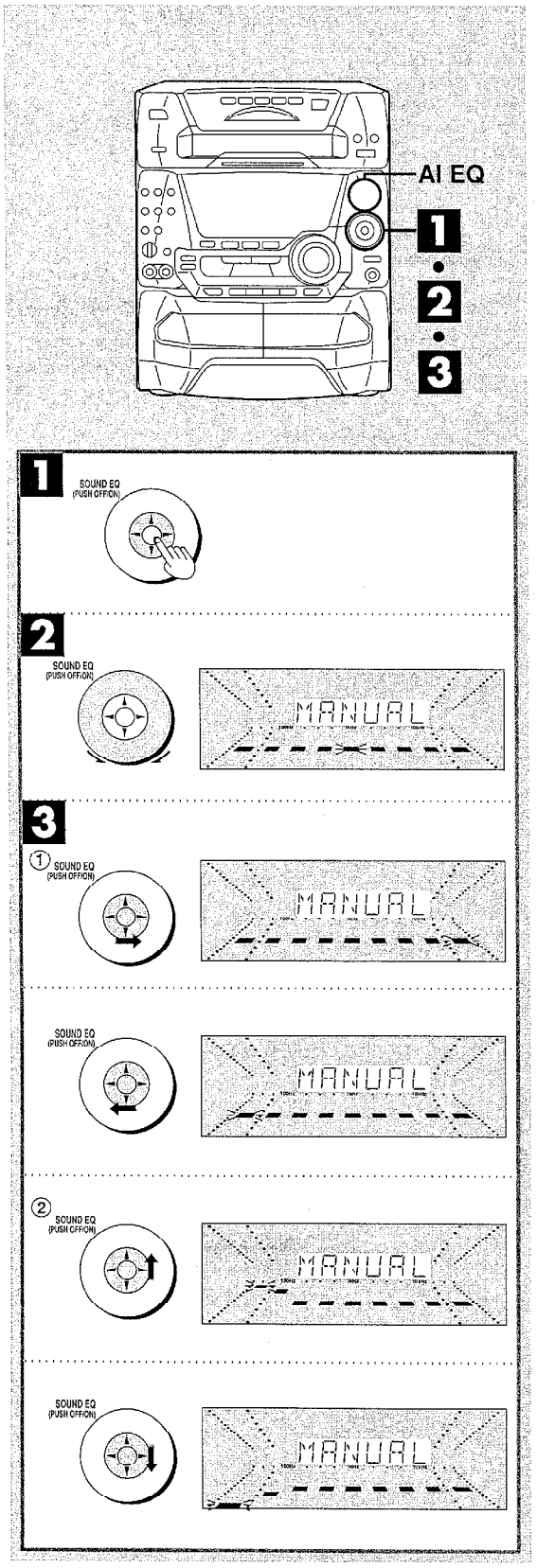
3 **Operate SOUND EQ joystick and set the sound quality as desired.**
① ← → direction: SOFT–SHARP setting
② ↓ ↑ direction: LIGHT–HEAVY setting
Repeat steps ① and ② to set the desired sound quality.
The original display is restored on the display panel in about 5 seconds. Only one AI EQ lamp lights to give a rough indication of the coordinate position.
The sound quality can be re-selected using SOUND EQ while the lamp is lighted.

To release the equalizer
Press SOUND EQ joystick so that "FLAT" is displayed.

Notes

- The sound quality setting is stored automatically. It is recalled when "AI EQ" is next selected.
- All recordings are performed at the flat setting even if an alternative sound quality setting has been selected.

■ Varying the Sound Quality with the Manual Equalizer



1 **Press SOUND EQ joystick to turn on the equalizer.**
The SOUND EQ lamp lights more brightly, and "FLAT" is cleared.

2 **Dial SOUND EQ to display "MANUAL".**
When it is turned clockwise, the settings are selected in the following sequence.

① HEAVY ←
② CLEAR
③ SOFT
④ DISCO
⑤ LIVE
⑥ HALL
⑦ **MANUAL**
⑧ AI EQ ←

3 **Operate SOUND EQ joystick and set the sound quality as desired.**

① ← → direction: For selecting the range of the sound to be adjusted

Characteristics of each sound range

Under 100 Hz:	Super woofer range
Around 330 Hz:	Bass to midrange
Around 1 kHz:	Midrange
Around 3.3 kHz:	Midrange to treble
Above 10kHz:	Treble

② ↓ ↑ direction: For adjusting the level (7 steps)

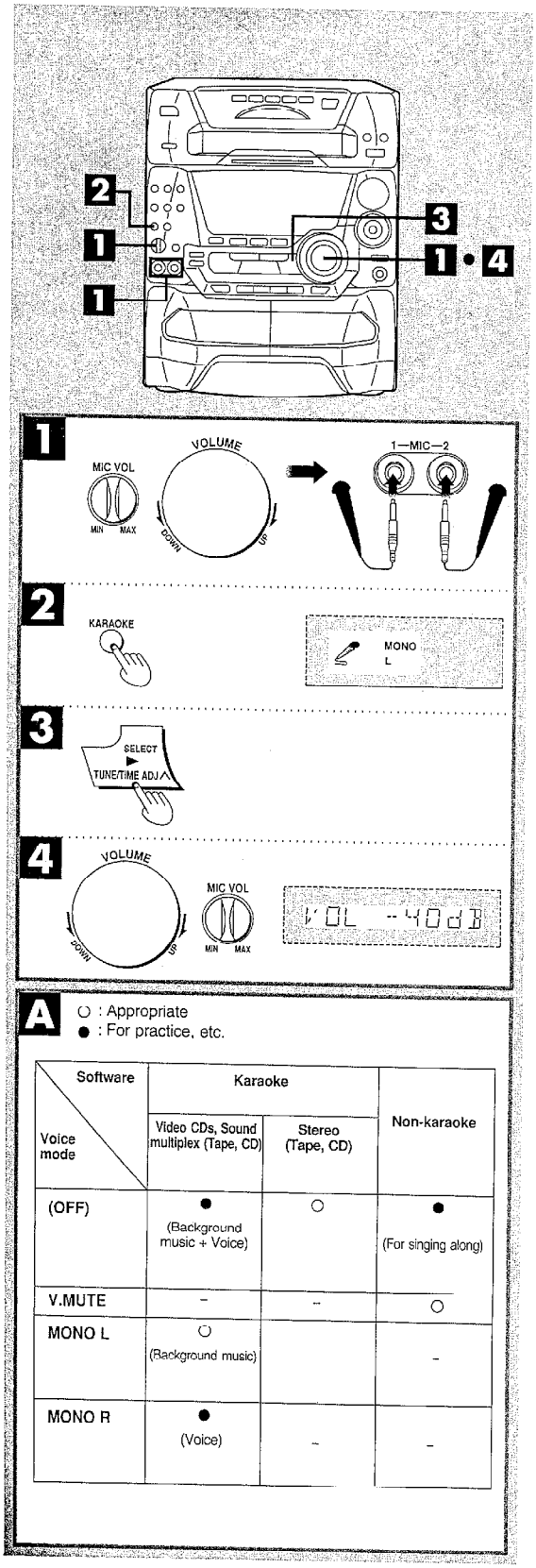
When the level is in the center, the dot flashes rapidly.
Repeat steps ① and ② to set the desired sound quality.
The original display is restored on the display panel in about 5 seconds. When the manual equalizer is ON, all four AI EQ lamps light.
The sound quality can be re-selected using SOUND EQ while the lamp is lighted.

To release the equalizer
Press SOUND EQ joystick so that "FLAT" is displayed.

Notes

- The sound quality setting is stored automatically. It is recalled when "MANUAL" is next selected.
- All recordings are performed at the flat setting even if an alternative sound quality setting has been selected.

■ Singing Along with KARAOKE



A

○ : Appropriate
● : For practice, etc.

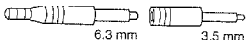
Software / Voice mode	Karaoke		Non-karaoke
	Video CDs, Sound multiplex (Tape, CD)	Stereo (Tape, CD)	
(OFF)	● (Background music + Voice)	○	● (For singing along)
V.MUTE	–	–	○
MONO L	○ (Background music)		–
MONO R	● (Voice)	–	–

You can enjoy Karaoke while watching the TV screen which displays the motion picture and words of a song.

Preparation:
Switch on the power of the TV, and switch to the video input mode. For details, refer to the operating instructions of the TV.

1 **Connect the microphone(s) (not included) to the MIC jack(s) after reducing the volume level.**
Plug type: 3.5 mm monaural

(For China only)
If the microphone plug does not fit the MIC jack(s), use the microphone adaptor (included).



2 **Press KARAOKE to select the voice mode.**
Every time you press the button:

V•MUTE → MONO L → MONO R
↑ —— Light off (OFF) ←——┘

Voice mode selection: A
If you want to play with the karaoke function, check first whether or not your software is formatted for karaoke and then select the voice mode.

Note
A bar is indicated in the table when the voice mode is least effective. It is better to avoid using the mode in such cases.

V.MUTE function:
The voice portion of the track is blocked out but not the background music. You need software recorded in stereo sound if you want to use the voice mute function. Voice and/or static may be reproduced with the following types of software.
- Software recorded monaural
- Classic music, or works performed by a limited number of instruments
- Chorus works or duets

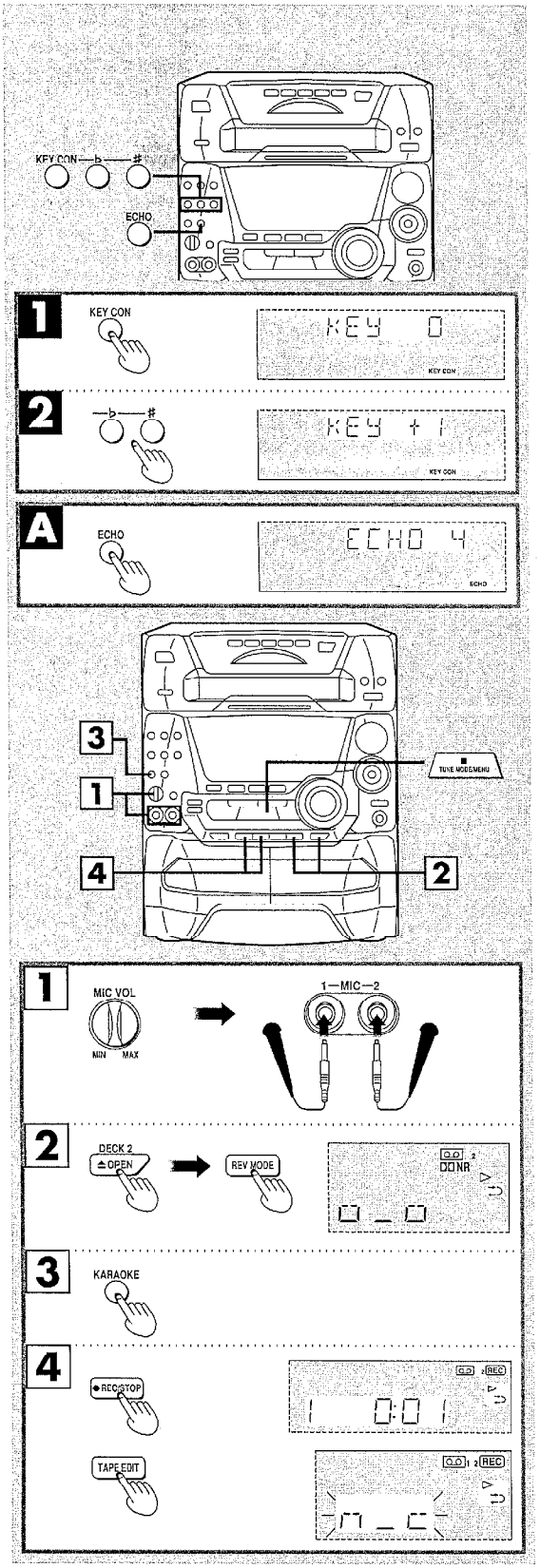
3 **Press SELECT, ► to start play.**

4 **Adjust volume with VOLUME and MIC VOL and sing along.**

To cancel the "KARAOKE" mode:
Press KARAOKE to select "(OFF)" mode.

Notes
- This unit is not equipped with image, channel switching function or fade-out function.
- If strange noise (squealing or howling) is emitted during use, move the microphone further away from the speakers, or turn down the microphone volume.
- When you are not using the microphone, disconnect it from MIC jack, and turn down the microphone volume level to MIN.
- Sound quality and sound field can be adjusted when using KARAOKE but recording will not be affected.

(Continued on next page)



Changing the key (available only when the "CD" input source is selected)

1 **Press KEY CON.**
"KEY CON" will light.

2 **To raise the key by a halftone:**
Press #.
Each time the button is pressed, the key will change as follows.
KEY –3 → –2 → –1 → 0 → +1 → +2 → +3

To lower the key by a halftone:
Press b.
Each time the button is pressed, the key will change as follows.
KEY +3 → +2 → +1 → 0 → –1 → –2 → –3

To cancel the key control function:
Press the KEY CON again to select off.
"KEY CON" will go out.

When using the remote control to perform the operations described above
Press SHIFT and without releasing the button, press the key control button (KEY CON, b or #).

Using the Echo Effect A

Press ECHO.
Each time the button is pressed, the effect will change as follows.

ECHO 1 → ECHO 2 → ECHO 3 → ECHO 4
↑ OFF ←

Echo levels from ECHO 1 to ECHO 4 can be selected.

To record your "KARAOKE" performance

1 **First, lower volume with MIC VOL then, connect the microphone to MIC jack(s).**

2 **Press ▲ OPEN DECK 2 to insert the tape and then select the reverse mode.**

3 **Press KARAOKE to select the voice mode.**

4 **Start recording and KARAOKE performance.**
- **When singing off CDs**
  Press ● REC/STOP and start KARAOKE performance.
- **When singing off tapes**
  Press TAPE EDIT and start KARAOKE performance.

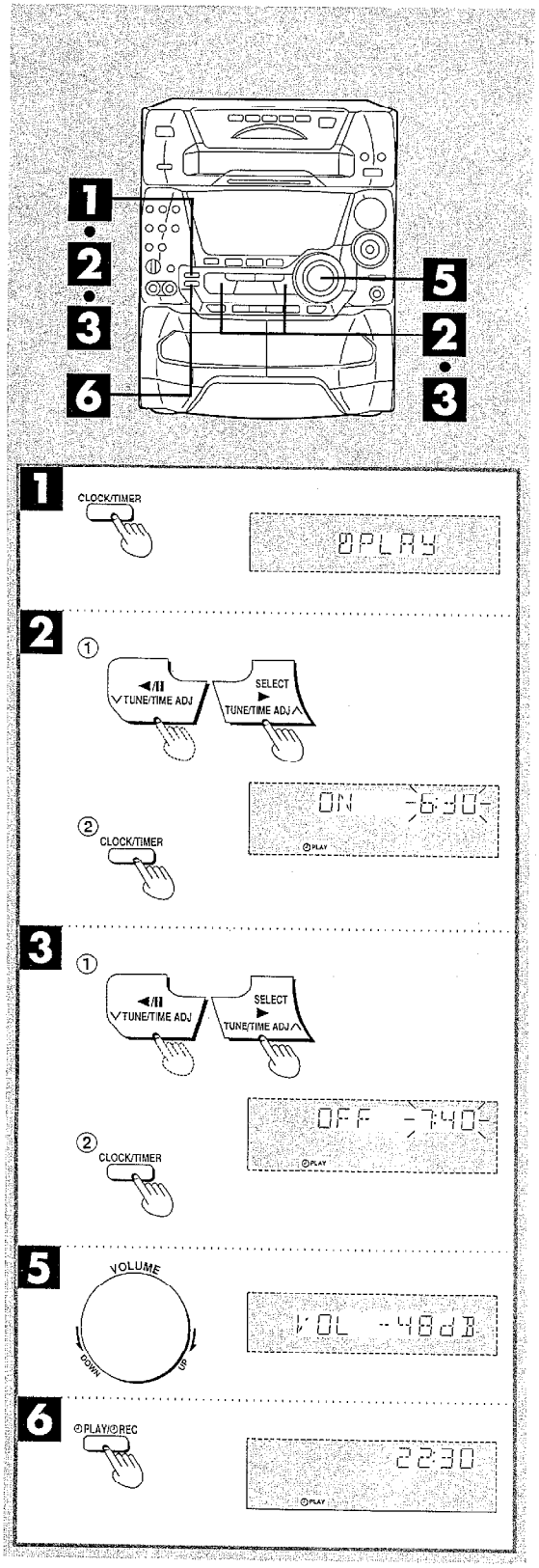
To stop recording
- **When singing off CDs**
  Press ● REC/STOP.
- **When singing off tapes**
  Press ■.

Notes
- To playback the recorded tape, be sure to press KARAOKE to select the "(OFF)" mode.
- You cannot play or record KARAOKE with radio backing.

To record your voice

1. Follow above step 1 to 2.
2. Press TAPE.
3. Press ● REC/STOP to start recording.
4. Speak through the microphone and adjust volume with VOLUME and MIC VOL.

■ Using the Timer



Using the play timer

Select this timer when you want to use the timer as an alarm clock. You can wake up listening to music (CD, tuner, tape or aux) at a desired volume level and time.

Preparations

- Make sure that you have completed "Setting the time" .
- Switch on the power.

The figure shows how to set the play timer to play a CD from 6:30 to 7:40.

1 **Press CLOCK/TIMER to select "⏲PLAY".**
Every time you press the button:
CLOCK → ⏲PLAY → ⏲REC
↳ Previous display ↵

2 **"ON" time setting**

(Within 8 seconds or so)
① **Press ∨ or ∧ to select the starting time.**
② **Press CLOCK/TIMER.**

3 **"OFF" time setting**

① **Press ∨ or ∧ to select the ending time.**
② **Press CLOCK/TIMER.**

4 **Source selection**

Select the desired source and then prepare for playing.

To play CD(s)
Press CD and insert CD(s).
If more than 1 CD is loaded
Press DISC 1-DISC 5 to select the CD you want to hear first and press ■.

Note
Disc selection does not become part of the timer memory.

To play tape(s)
Press TAPE and insert tape(s).
If tape is loaded in both decks, playback will start from deck 2.

To play the radio
Press TUNER and tune in the desired station.

To play a unit connected to the "AUX" terminals
Press AUX.

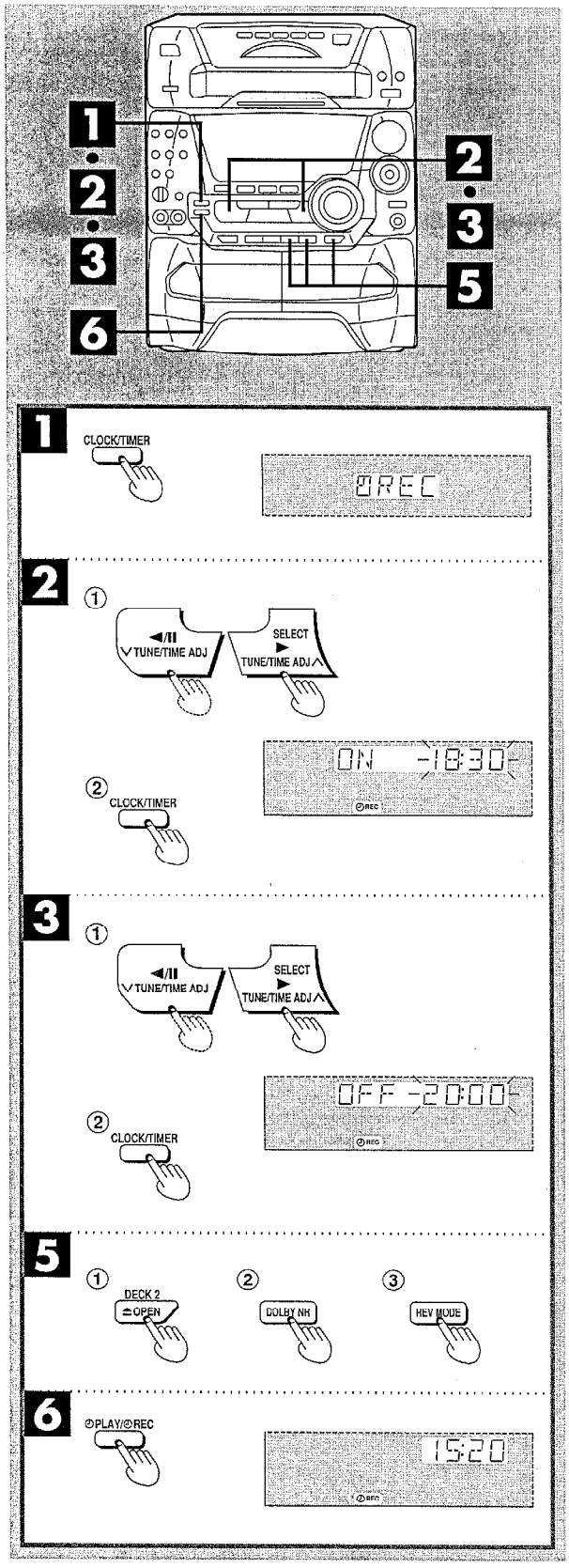
5 **Play volume setting**

Set the playback volume.

6 **Press ⏲PLAY/⏲REC to select "⏲PLAY".**
Every time you press the button:
⏲PLAY → ⏲REC
↳ Out (OFF) ↵

Power will shut OFF automatically in a few seconds.

The timer play will start at the preset time with volume increasing gradually up to the volume level you preset.



Using the record timer

Select this timer when you want to use the timer to record a midnight program or while you are out.

Preparations

- Make sure that you have completed "Setting the time".
- Switch on the power.

Set the timer at least 2 minutes before you want to start recording.

The figure shows how to set the record timer for recording FM broadcasts from 18:30 to 20:00.

1 **Press CLOCK/TIMER to select "⏲REC".**

Every time you press the button:

CLOCK → ⏲PLAY → ⏲REC
↑ Previous display ←

2 **"ON" time setting**

(Within 8 seconds or so)

① **Press ∨ or ∧ to select the starting time.**
② **Press CLOCK/TIMER.**

3 **"OFF" time setting**

① **Press ∨ or ∧ to select the ending time.**
② **Press CLOCK/TIMER.**

4 **Source selection**

Select the desired source and then prepare for recording.

To record from the radio
Press TUNER to select the band and tune in the desired station.
To record from a unit connected to the "AUX" terminals
Press AUX.

5 **Prepare for recording.**

① Insert a tape into deck 2 with the side on which the recording will start facing you.
② Select Dolby NR.
③ Select the reverse mode.

Note

Dolby NR and reverse mode do not become part of the timer memory.

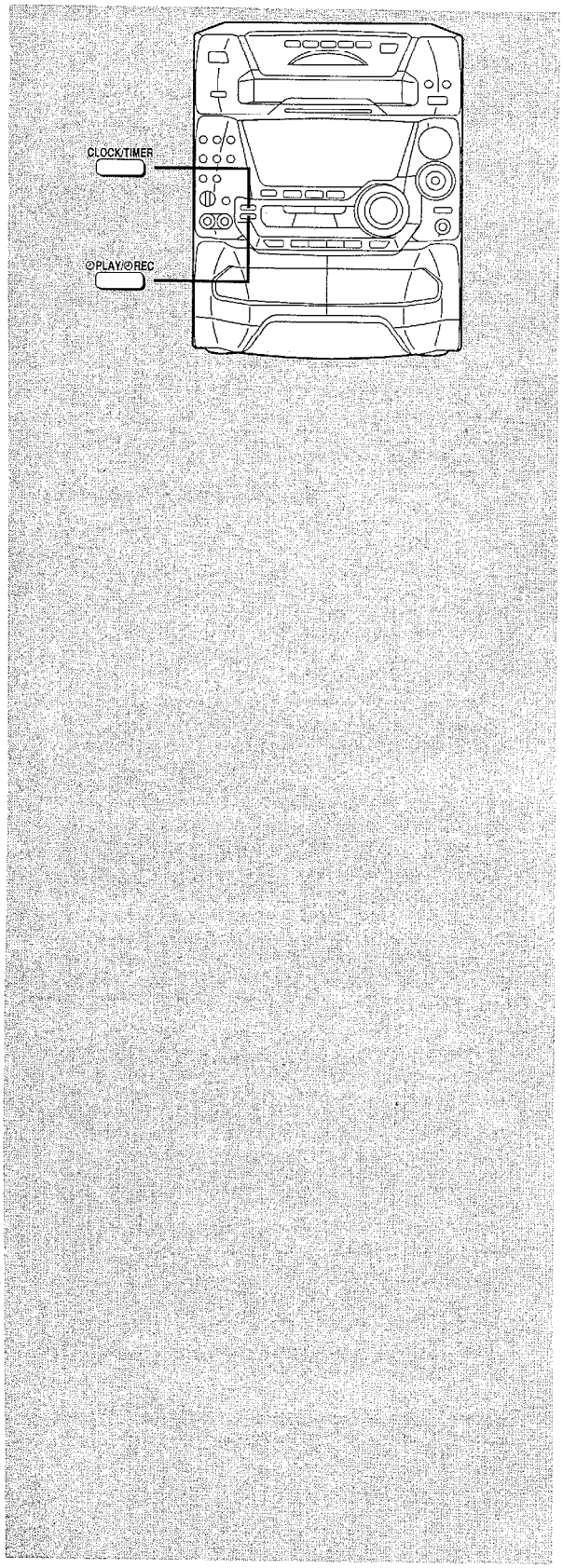
6 **Press ⏲PLAY/⏲REC to select "⏲REC".**

Every time you press the button:

⏲PLAY → ⏲REC
↑ (OFF) ←

Power will shut OFF automatically in a few seconds.

About 30 seconds before the set time, the recording will start with all sound muted automatically.



Using the play/record timer

To switch the timer OFF

Press ⏲PLAY/⏲REC and check "⏲PLAY" (for play timer) or "⏲REC" (for record timer) goes out.

If you set the timer incorrectly

Repeat the procedure from step **1**.

To check settings

Press CLOCK/TIMER to select "⏲PLAY" (for play timer) or ⏲REC (for record timer).

Two seconds later, the display will change in the following order:

- For play timer
  - ① Play start time
  - ② Play end time
  - ③ Play source and playback volume

- For record timer
  - ① Recording start time
  - ② Recording end time
  - ③ Recording source

You can check the settings even when the system is OFF.

To enjoy the desired source after the timer setting is completed

The volume level (for play timer) and music source are stored in the timer memory and the timer will start in these preset conditions. However, the Disc number, Dolby NR and reverse mode do not get stored in the timer memory.

1. After step **6**, turn on the power and start playing the desired source.
2. Reset the Disc number, Dolby NR and reverse mode if you have changed any of them, confirm that a Disc or cassette is inserted, then press POWER to put the unit on standby.

Turning the timer ON/OFF

As long as "⏲PLAY" or "⏲REC" is displayed, the timer will come ON everyday as set.

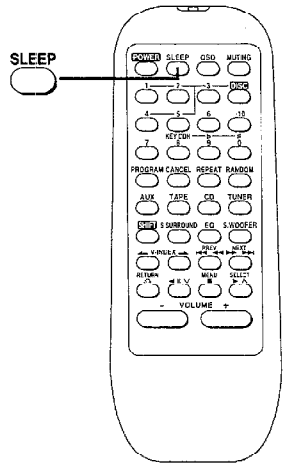
You can turn the timer ON/OFF by pressing ⏲PLAY/⏲REC while the system is OFF.

Remember that when "⏲PLAY" or "⏲REC" is displayed, the timer is ON. When not displayed, the timer is OFF.

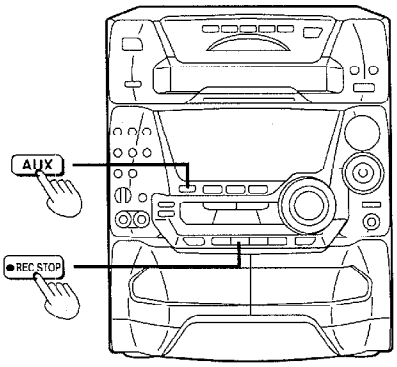
Notes

- If the power is on, the timer will not function. The system must be in the standby mode.
- If you switch the power to the standby mode while the play/record timer is functioning, the OFF time setting will not be activated.
- If AUX is selected as the source, when the timer comes ON, the system will turn ON and will engage "AUX" as the source. If you want to playback or record from a connected component, set the component's timer to the same time. (See the instruction manual that came with the component.)
- The play timer cannot be used in combination with the record timer.

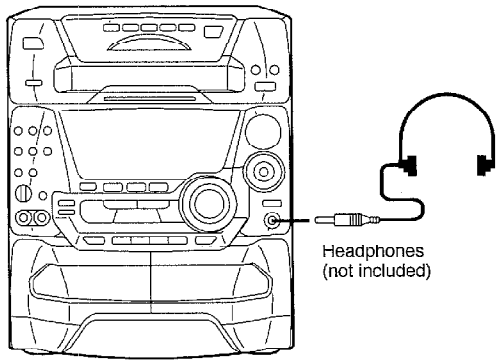
A



B



C



Using the sleep timer A

This timer turns power to your system OFF at the set time (Max. 2 hours, settable at 30-minute interval). It lets you fall asleep listening to music.

by remote control only

Preparations

- Make sure that you have completed "Setting the time".
- Switch on the power.

The figure shows how to set the system to standby mode after 30 minutes.

While enjoying the desired source:

Press SLEEP to select the desired time.

Every time you press the button:

→ 30 → 60 → 90 → 120 → OFF →

The system is turned off after the set time has elapsed.

To cancel the sleep timer:
Press SLEEP to select "OFF".

To confirm the remaining time:
(only while power is ON)
Press SLEEP.

To change the time remaining during operation:
Press SLEEP to show the remaining time then press SLEEP to select the desired time.

Notes

- The sleep timer turns OFF automatically the moment you attempt to edit-record a CD using CD Manager function.
- The sleep timer can be used in combination with the play/record timer. The sleep timer always has priority. Be sure not to overlap timer settings.

Using an external unit B

Listening to an external source

1. Press AUX.
   The power will come on automatically.
2. Start playback from the external source. (For details, refer to the owner's manual of the equipment.)

Recording from an external source

1. Follow steps 1–3 on page 25.
2. Press AUX.
3. Press ● REC/STOP (recording starts).
4. Start playback from the external source. (For details, refer to the owner's manual of the equipment.)

Recording on an external unit

(See B on page 8 for external unit connections)

1. Turn on the VCR or other recording equipment and make all necessary settings.
2. Start recording on the VCR (or other recording equipment) and then start playing the source to be recorded.

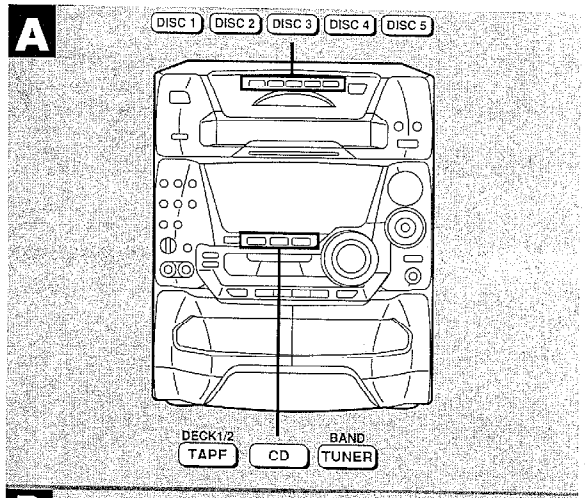
Listening with headphones C

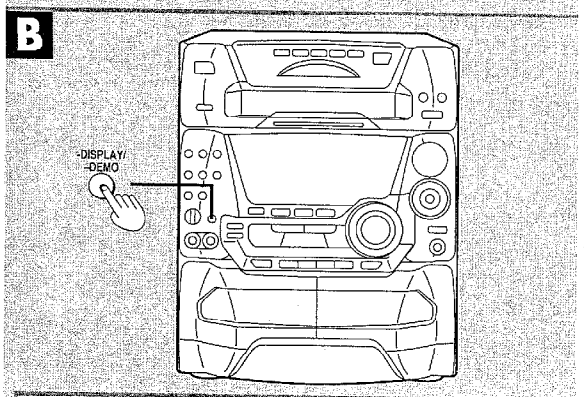
Reduce the volume level, and connect the headphones.
Plug type: 3.5 mm stereo

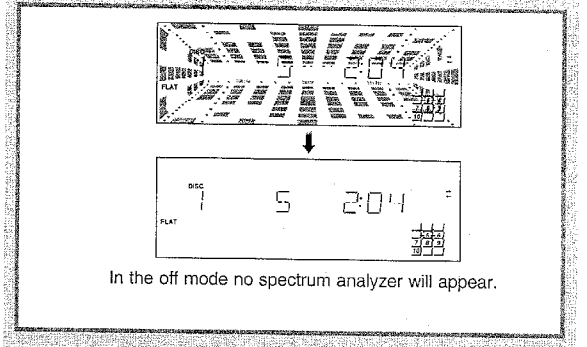
Note

Avoid listening for prolonged periods of time to prevent hearing damage.

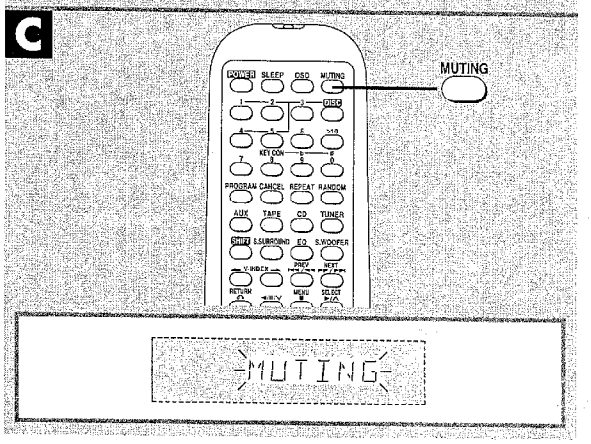
Convenient Functions







In the off mode no spectrum analyzer will appear.



One-touch play A

When the system is on standby, playing starts automatically when you press one of the following buttons.

Listening to radio broadcasts	
TUNER	The station heard previously is tuned in.
Listening to compact discs	
CD	Play starts from track 1 of the CD played previously.
DISC 1 ~ DISC 5	Play starts from track 1 on the selected CD.
Listening to tapes	
TAPE	Playback starts from deck 2 if tapes have been installed in both decks

Switching displays B

Press -DISPLAY/–DEMO to select the desired spectrum analyzer.

Every time you press the button:

Aurora → (OFF) → Normal
↑ ← Peak hold ←

To mute the volume C

by remote control only

This feature is convenient when you have a telephone call, etc.

Press MUTING.

Press the button again to cancel.
"MUTING" goes out.
Muting can also be cancelled by lowering the volume all the way (--dB).

When the system is turned off, the muting operation will be automatically cancelled.

■ Self-Diagnostic Function

This system is equipped with a self-diagnostic function that displays an error code indicating the type of error in the event of an operating fault. This feature is useful when determining the cause of a problem during servicing.

Display Method

Tapes Used

- One side (A or B) of a blank tape with the erasure prevention tab removed is used (the tape should be advanced to about the middle of the tape).
- In addition, another tape containing music on both sides with the erasure prevention tab in place is used (the tape should be advanced to about the middle of the tape and there should be at least four seconds between selections).

Switching to Self-Diagnostic Mode

1. Press the Tape/deck select button (TAPE) with no tapes loaded in DECK 1 or DECK 2. (The power will come on automatically.)
2. Press the STOP button (■) for at least two seconds, and while still pressing the STOP button, press the FF button (►►/►►I) simultaneously for at least two seconds. A "T" will appear on the display.

Invoking the Self-Diagnostic Display

Cassette Unit (H01, H02, H03, F01, F02)

1. Press the Tape/deck select button (TAPE) and select DECK 2.
2. Install a blank tape with one erasure prevention tab removed in DECK 2 so that the side with the missing erasure prevention tab is on the left. Then close the cassette holder.
3. Press the FF button (►►/►►I). The tape deck will fast forward for about two seconds and then stop automatically.
4. Turn the tape over and close the cassette holder.
5. Press the rewind button (I◄◄/◄◄). The cassette deck will rewind for about two seconds and then stop automatically.
6. Replace the tape in DECK 2 with a music tape whose erasure prevention tabs are in place on both sides, then close the cassette holder.
7. Press the playback button (►). The cassette deck will perform the TPS operation and then stop automatically.
8. Press the REC button (●). (Recording does not commence.)
9. Remove the tape from DECK 2.
10. Press the Tape/deck select button (TAPE) and select DECK 1.
11. Repeat steps 2 through 7 above for the tape in DECK 1.
12. Use the Tape/deck select button (TAPE) to select the deck to be checked for faults and then press the stop button (■) . If there is a fault on the tape, the appropriate code is indicated on the display. When more than one fault is detected, the additional codes are displayed each time the stop button (■) is pressed (e.g., H02 → H03 → F01). If there are no detected faults, the letter "T" will remain on the display even if the stop button (■) is pressed.

CD Unit (F15, F16, F25-F28, F75, H15, H16)

1. Press the CD button (CD).
2. Press the disc check open button (▲ NEXT OPEN) and open and close the disc tray in sequence from disc 1 to disc 5.
3. Press the disc tray open/close button (▲ OPEN/CLOSE) and close the disc tray.
4. Press the stop button (■) . If there is an abnormality on the disc, it is displayed on the display. When there is more than one abnormality, the display changes each time the stop button (■) is pressed (e.g., F15 → F25 → F26). If there are no faults detected, the letter "T" will remain on the display even if the stop button (■) is pressed.

Power IC Unit (F61)

- F61 is displayed automatically in the event a fault is detected.

Canceling the Self-Diagnostic Mode

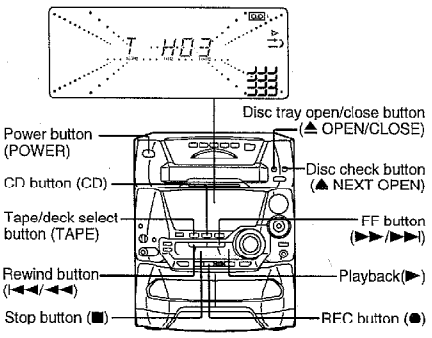
- Provided F61 is not displayed, the self-diagnostic mode can be canceled by pressing the power button (POWER) to turn the system off and then pressing the power button (POWER) again to turn it back on.
- When F61 is displayed, the F61 indication will remain until the cause of the problem has been resolved.

Clearing the Self-Diagnostic Display

- The contents of the abnormality display are stored in memory. In order to clear this memory, continue to press the stop button (■) for at least five seconds while in the self-diagnostic mode. The memory will clear, the word "CLEAR" will appear on the display briefly, then the letter "T" will appear once again. Always be sure to clear this memory after completing repairs.

Display Positions

Self-Diagnostic Display Example



Display content

Note: Items marked with (*) are automatically displayed, and do not require the procedure described in the section "Viewing the display."

Display code	Symptom or condition	Cause and method of correction
H01	Cassette deck does not operate correctly.	Faulty cassette deck mechanism mode detection switch (Deck 1: S951, Deck 2: S971) and plunger. (Check and replace)
H02	Unit does not record, or the unit goes into recording mode even when the erasure-prevention tabs have been removed from the cassette.	Faulty erasure-prevention tab detection switch (S974, S975) or short-circuit. (Check and replace)
H03	Tape does not play, even when the tape deck play button is pressed. The motor operates when the tape deck play button is pressed, even when no cassette is loaded in the deck.	Faulty tape detection switch (Deck 1: S952, Deck 2 : S972) or short-circuit. (Check and replace)
F01	When the tape Play button is pressed, the tape advances only slightly and then stops.	Reel pulse error. (Faulty Hall IC) (Check and replace)
F02	TPS (tape program search) does not work.	Faulty TPS signal detection or faulty plunger control. (Check and replace mechanism control IC)
F15	When the CD Play button is pressed when either the power is off, or from some function other than CD, it takes excessive time (8 seconds or more) for the CD to play.	Faulty traverse inner circumference position detection switch (S701). (Check and replace)
F16	Traverse deck pushes up disc tray.	Faulty up position detection switch (S3).
F25	CD tray closes immediately after it is opened.	Faulty disc tray open detection switch (S4). (Check and replace)
F26	CD does not play, even when the tape deck play button is pressed.	Faulty system control or servo processor IC (IC901 or IC702).
F27	Tray keeps moving for a while, or selected tray does not open.	Faulty disc number detection switch (S5).
F28		Faulty stocker position detection or play position detection switch (S1 or S2).
F75	When a CD is loaded, "NO DISC" is displayed and the CD does not play.	Faulty CD circuit power supply. (Faulty power supply IC or CD circuit power supply system.) (Check and replace) Flexible circuit board has become disconnected or broken wiring. (Check and replace) Faulty servo-processor IC. (Check and replace)
* F61	When the power switch is switched on, it automatically switches back off, making it impossible to switch power on.	Faulty power amp. IC (IC601). When a DC voltage is applied to the speaker terminals.)

■ Operation Checks and Component Replacement Procedures

NOTE

1. **This section describes procedures for checking the operation of the major printed circuit boards and replacing the main components.**
2. **For reassembly after operation checks or replacement, reverse the respective procedures. Special reassembly procedures are described only when required.**
3. **Select item the following index when checks or replacement are required.**

• Contents

■ Checking Procedures for each P.C.B. Page.

1. Checking for the main P.C.B.. ..... 40.
2. Checking for the CD servo P.C.B.. ..... 41,42.
3. Checking for the tuner P.C.B., video P.C.B. and power AMP P.C.B.. ..... 42,43.
4. Checking for the mechanism control P.C.B. and FL P.C.B.. ..... 44,45.

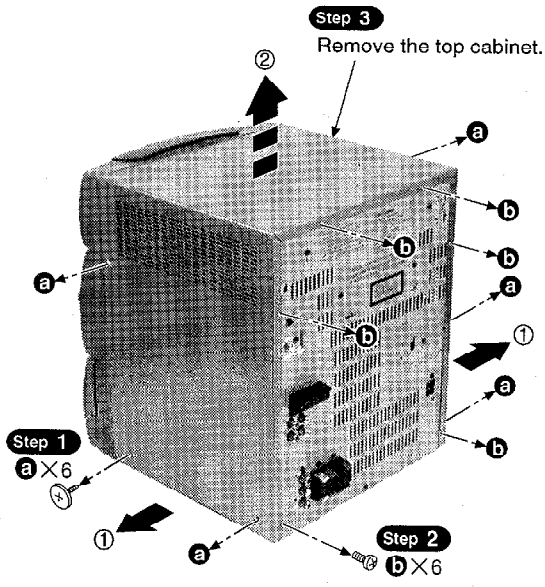
■ Main Component Replacement Procedures

1. Replacement for the cassette lid ass'y. ..... 45.
2. Replacement for the power IC and regurator transistor. ..... 45,46.
3. Disassembly for the CD changer unit. ..... 46,47.
4. Reassembly for the CD changer unit. ..... 47~49.
5. Replacement for the traverse deck ass'y. ..... 49,50.
6. Replacement for the pinch roller ass'y and head block. ..... 50.
7. Replacement for the motor ass'y, capstan belt A, capstan belt B and winding belt. ..... 50~52.

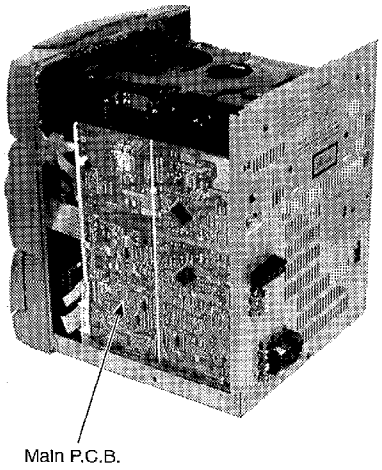
■ Measure for Tape Trouble ..... 52.

■ Checking Procedures for each P.C.B.

1. Checking for the main P.C.B.

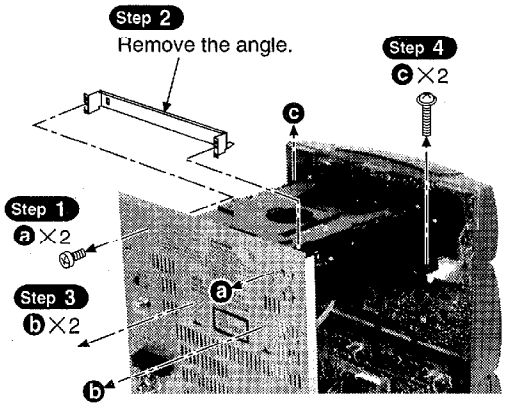


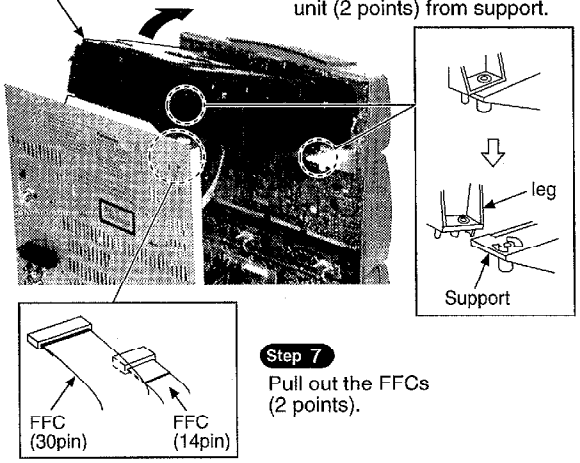
· **Check the main P.C.B. as shown below.**



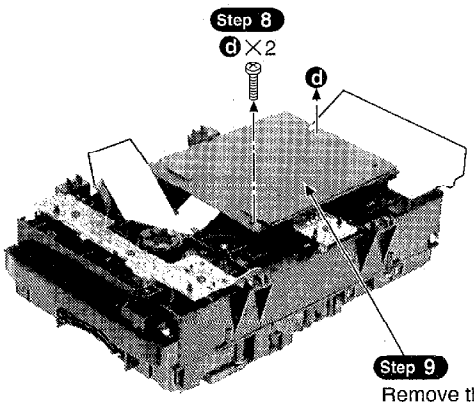
2. Checking for the CD servo P.C.B.

· Follow the Step 1 ~ Step 3 of the item 1 in checking procedure for each P.C.B. on page 40.

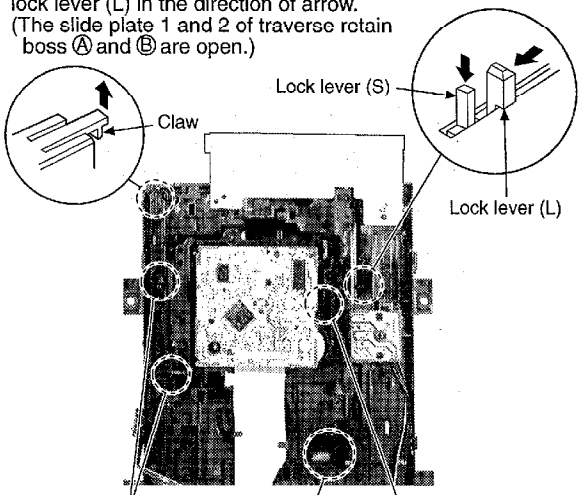


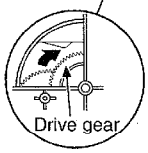


Step 7
Pull out the FFCs (2 points).



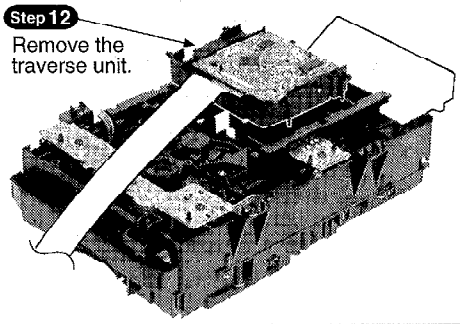
Step 11
Push the lock lever (S) with lifting the claw, and then push the lock lever (L) in the direction of arrow.
(The slide plate 1 and 2 of traverse rotain boss Ⓐ and Ⓑ are open.)

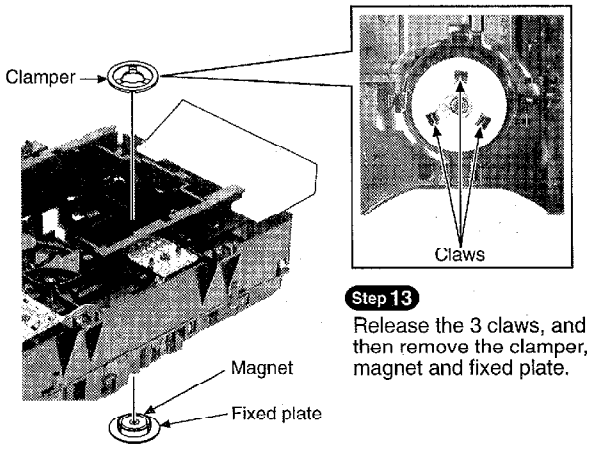




Step 10
Locate the traverse unit to the position "DOWN".
(Rotate the drive gear in the direction of arrow so that the position is "DOWN".)

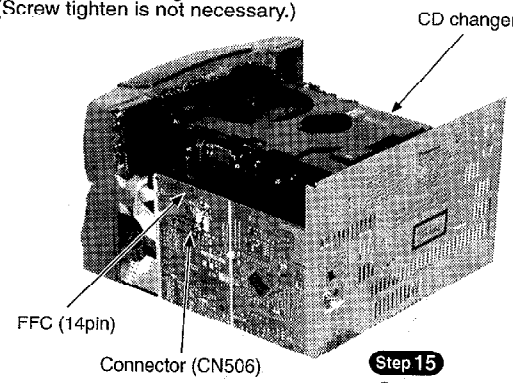
Step 12
Remove the traverse unit.



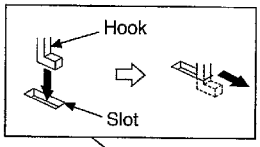


Step 13
Release the 3 claws, and then remove the clamper, magnet and fixed plate.

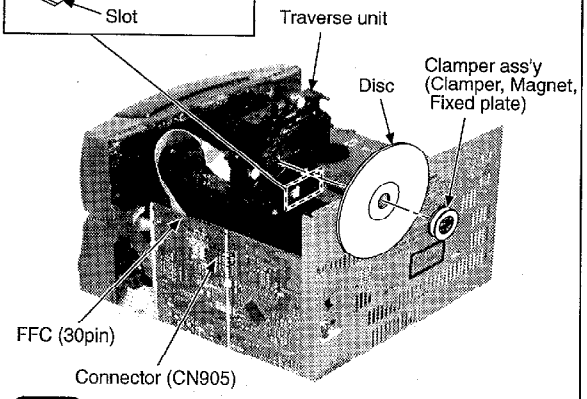
Step 14
Install the CD changer unit to the set.
(Screw tighten is not necessary.)



Step 15
Connect the FFC to the connector.



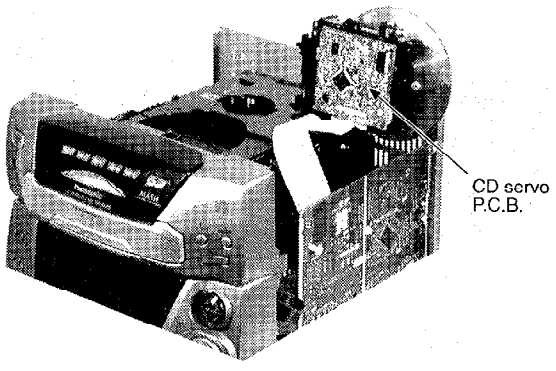
Step 16
Align the hook of traverse unit with the slot, and then stand it.



Step 17
Connect the FFC to the connector.

Step 18
Attach the disc and clamper ass'y to the traverse unit.

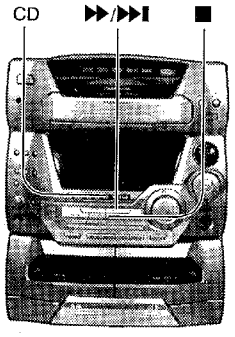
· Check the CD servo P.C.B. as shown below.



■Mode setting of unit when checking CD servo P.C.B.

The following settings are necessary operating CD traverse deck after removed from changer unit.

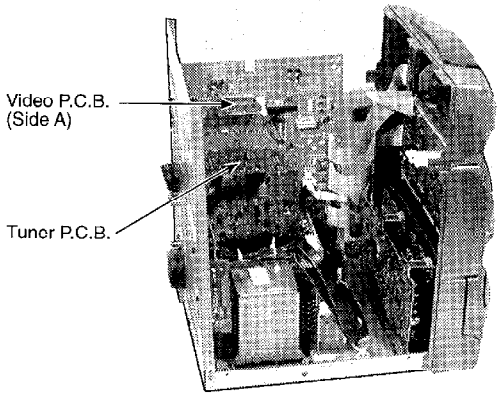
1. Power the unit "ON".
2. Press the "CD" button.
3. With pressing "■" button for 2 seconds or more, push the "▶▶/▶▶I" button for 2 seconds or more at the same time.

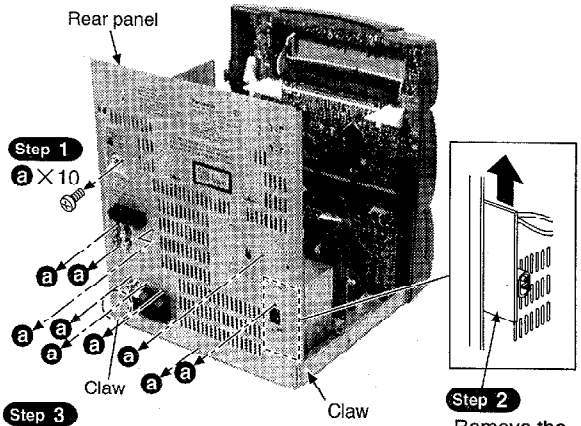


Depending on these settings, CD traverse deck which removed from CD changer unit can be operated.
In this setting mode, the CD changer unit will not operate.

3. Checking for the tuner P.C.B., video P.C.B. and power AMP P.C.B.

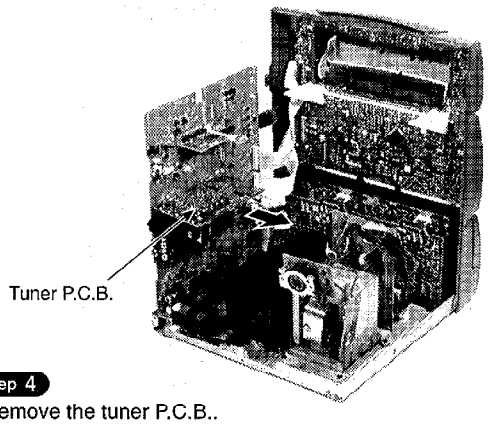
- Follow the **Step 1** ~ **Step 3** of the item 1 in checking procedure for each P.C.B. on page 40.
- Follow the **Step 1** ~ **Step 7** of the item 2 in checking procedure for each P.C.B. on page 41.
- **Check the tuner P.C.B. and video P.C.B. (side A) as shown below.**





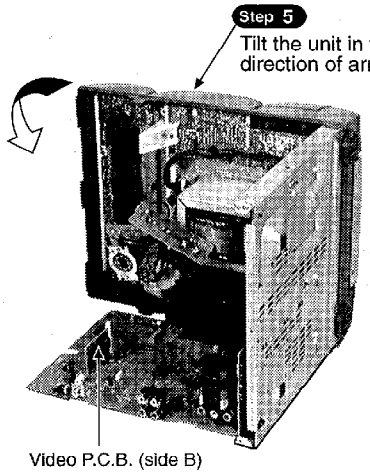
Step 3
Release the 2 claws, and then remove the rear panel.

Step 2
Remove the power supply P.C.B..

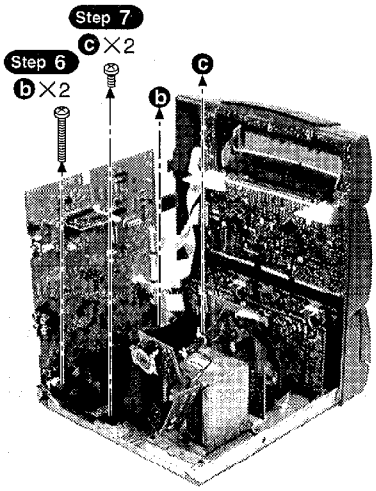


Step 4
Remove the tuner P.C.B..

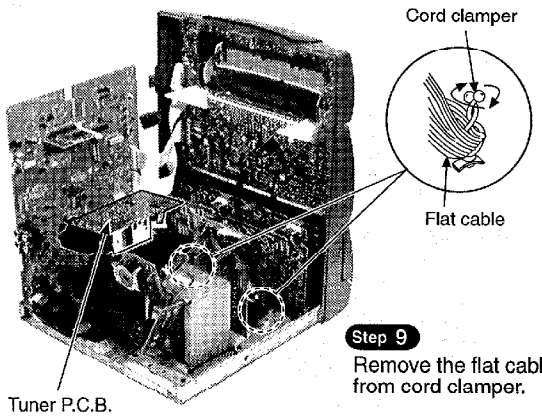
· Check the video P.C.B. (side B) as shown below.



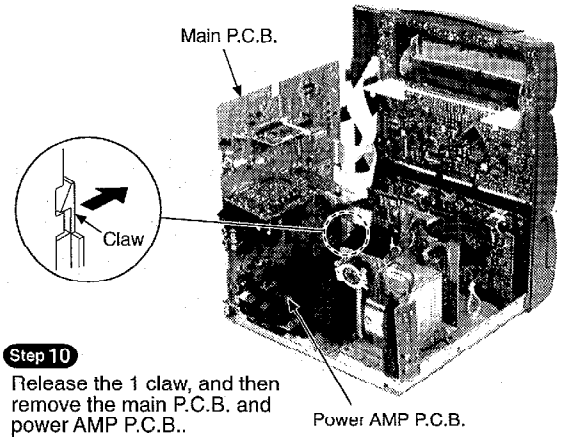
(Replace the unit.)



Step 8
Install the tuner P.C.B. to the main P.C.B..

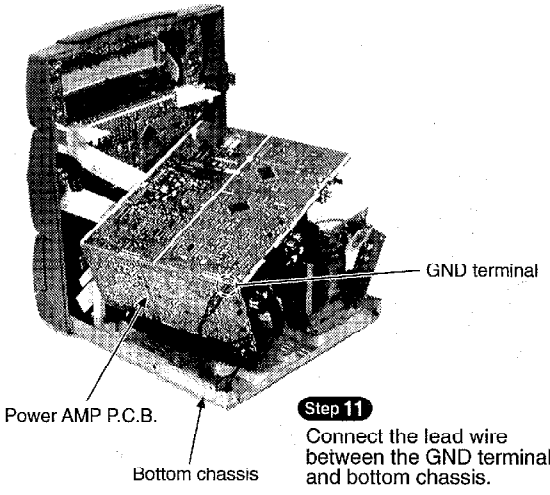


Step 9
Remove the flat cable from cord clamper.



Step 10
Release the 1 claw, and then remove the main P.C.B. and power AMP P.C.B..

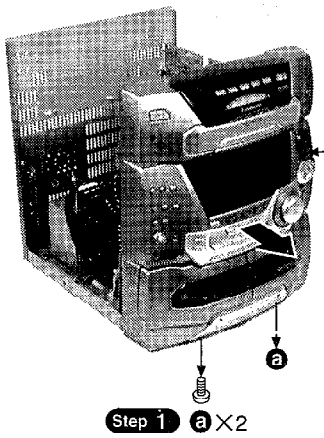
· Check the power AMP P.C.B. as shown below.



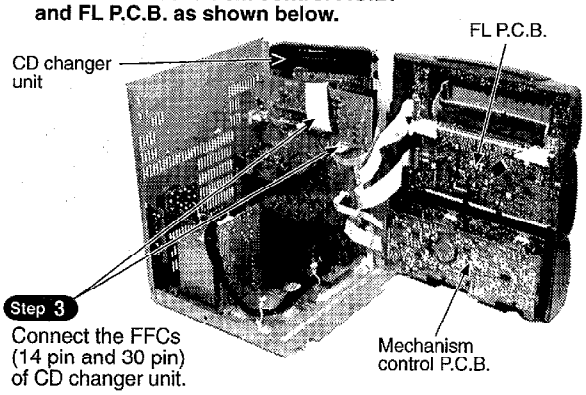
Step 11
Connect the lead wire between the GND terminal and bottom chassis.

4. Checking for the mechanism control P.C.B. and FL P.C.B.

- Follow the Step 1 ~ Step 3 of the item 1 in checking procedure for each P.C.B. on page 40.
- Follow the Step 1 ~ Step 7 of the item 2 in checking procedure for each P.C.B. on page 41.

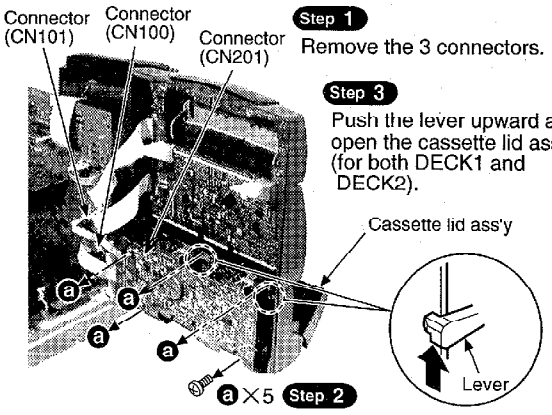


- **Check the mechanism control P.C.B. and FL P.C.B. as shown below.**

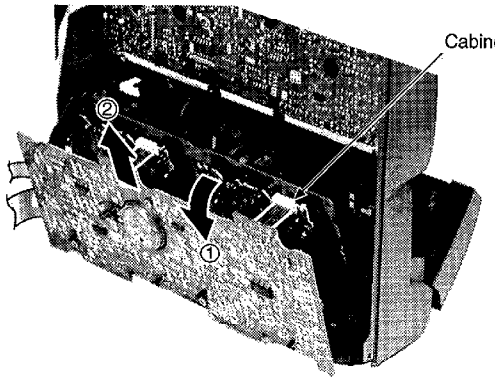


Removal of the mechanism control P.C.B. and mechanism P.C.B. for replacing parts.

- Follow the Step 1 , Step 2 of the item 4 in checking procedure for each P.C.B. on page 44.

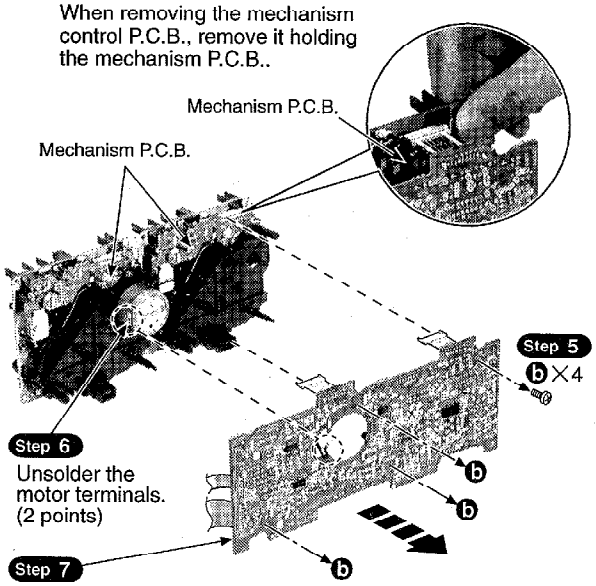


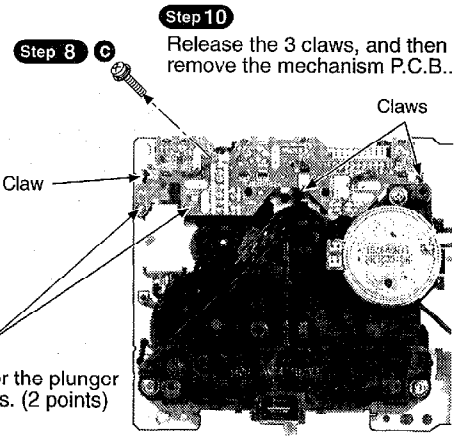
Step 4
Tilt the cassette mechanism in the direction of arrow ① and remove it in the direction of arrow ②.



NOTE

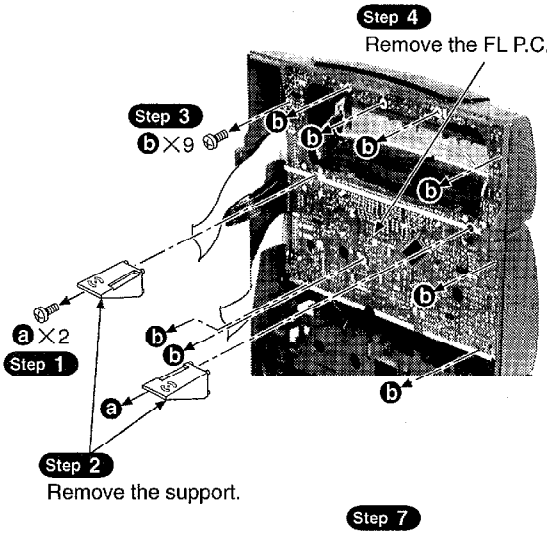
When removing the mechanism control P.C.B., remove it holding the mechanism P.C.B..

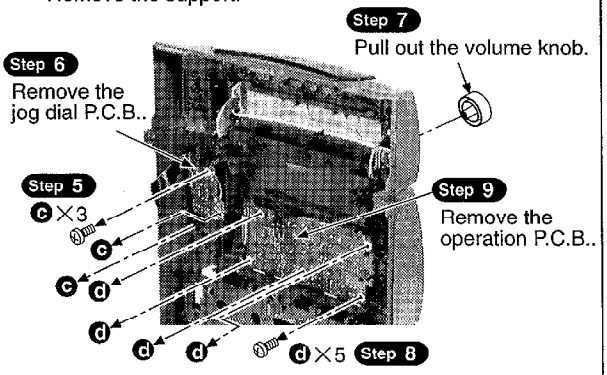




Removal of the FL P.C.B., jog dial P.C.B. and operation P.C.B. for replacing parts.

· Follow the Step 1 , Step 2 of the item 4 in checking procedure for each P.C.B. on page 44.

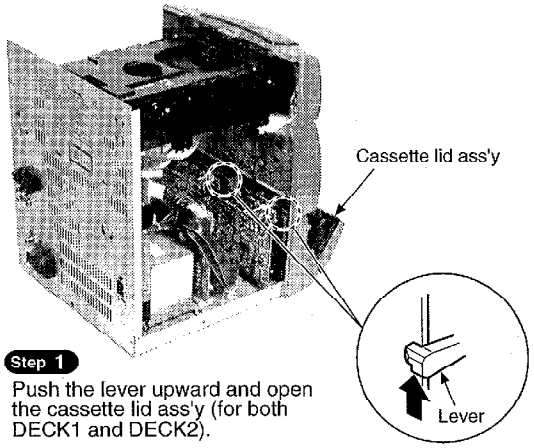


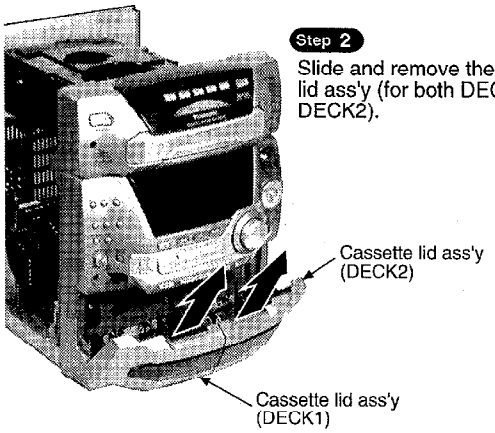


■ Main Component Replacement Procedures

1. Replacement for the cassette lid ass'y

· Follow the Step 1 ~ Step 3 of the item 1 in checking procedure for each P.C.B. on page 40.



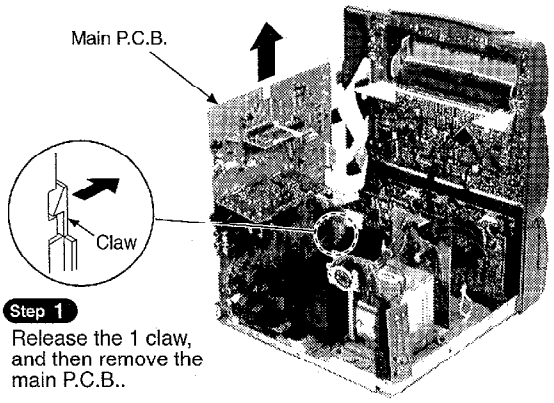


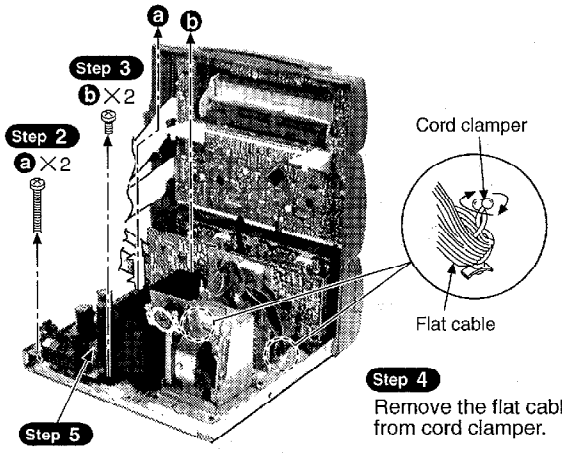
2. Replacement for the power IC and regulator transistor

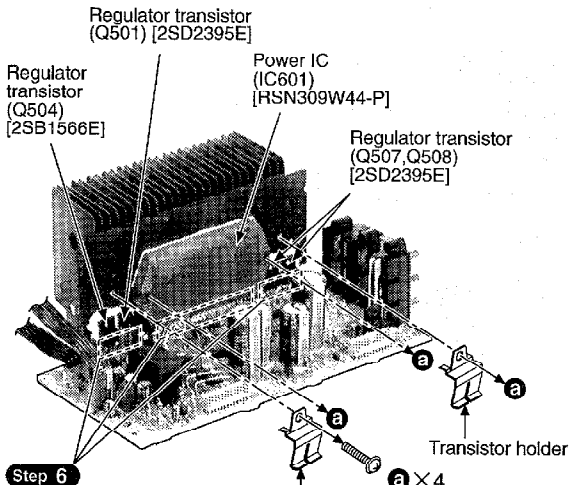
· Follow the Step 1 ~ Step 3 of the item 1 in checking procedure for each P.C.B. on page 40.

· Follow the Step 1 ~ Step 7 of the item 2 in checking procedure for each P.C.B. on page 41.

· Follow the Step 1 ~ Step 3 of the item 3 in checking procedure for each P.C.B. on page 42.





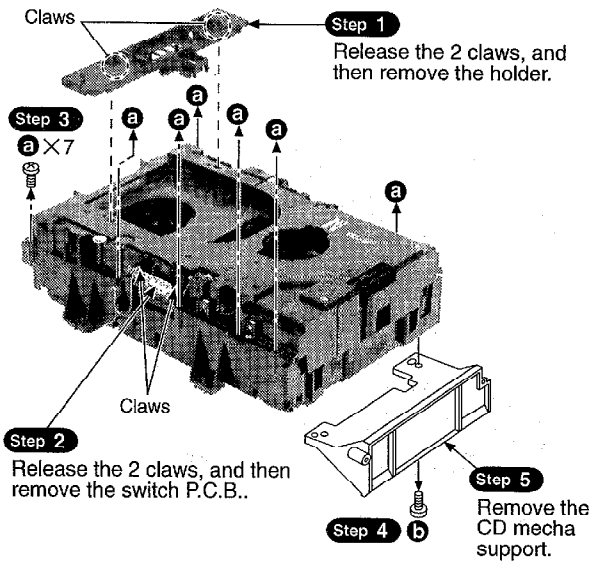


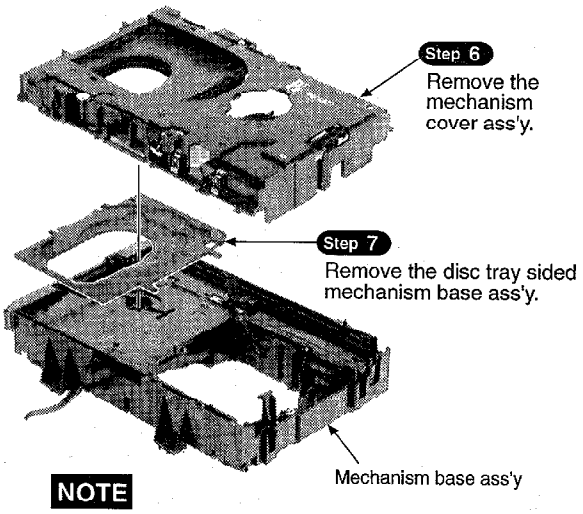
NOTE

1. When mounting the power IC or regulator transistor apply silicone conpound (RFKX0002) to the rear side of power IC or regulator transistors.
2. Tighten enough the screws (ⓐ) after replacing the power IC and regulator transistor.

3. Disassembly for the CD changer unit

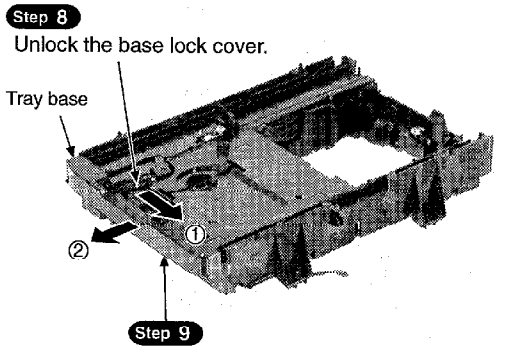
- Follow the Step 1 ~ Step 3 of the item 1 in checking procedure for each P.C.B. on page 40.
- Follow the Step 1 ~ Step 12 of the item 2 in checking procedure for each P.C.B. on page 41.

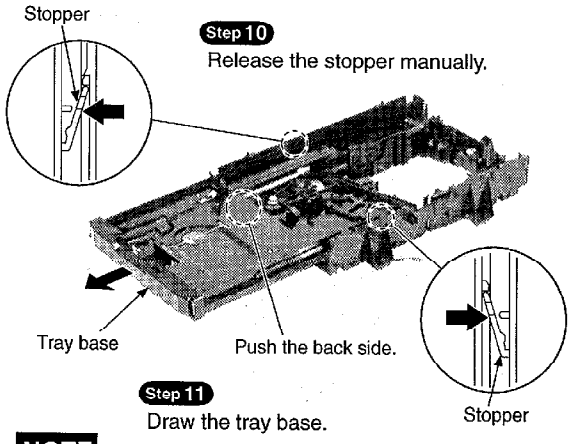




NOTE

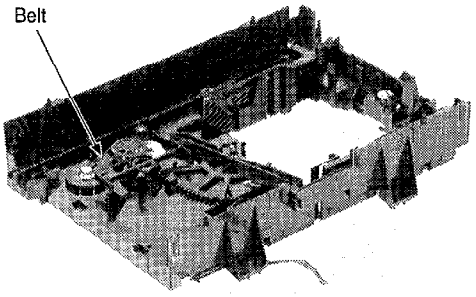
4 disc trays contacted to the mechanism cover ass'y will be removed.
1 disc tray is removed to the mechanism base ass'y.





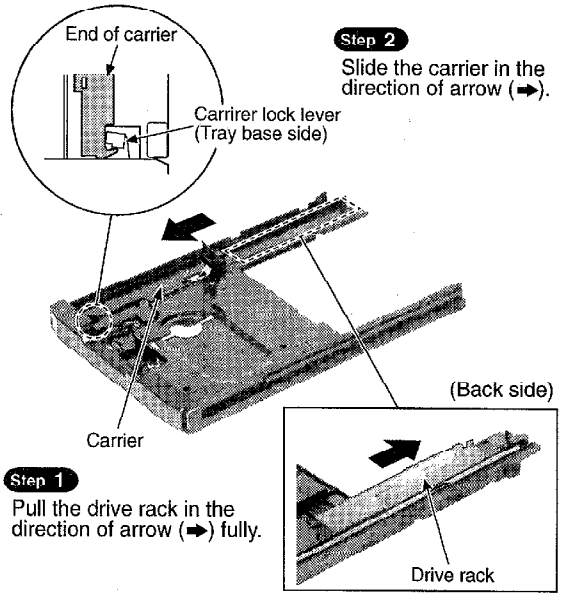
NOTE

In case that the tray base can not be open due to hooking, draw the tray base with finger pressing the back side indicated by (◌) of base. (Take care handling of stopper)



The belt and each part can be releaced after above procedures are performed.

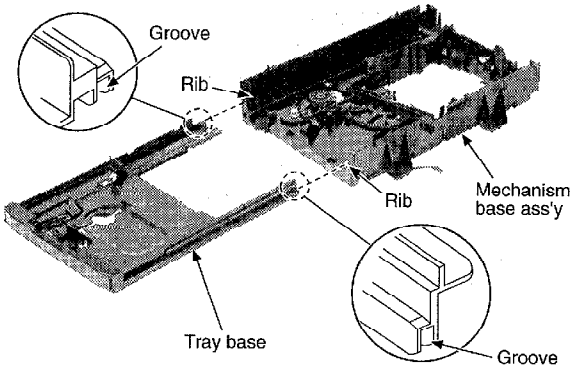
4. Reassembly for the CD changer unit



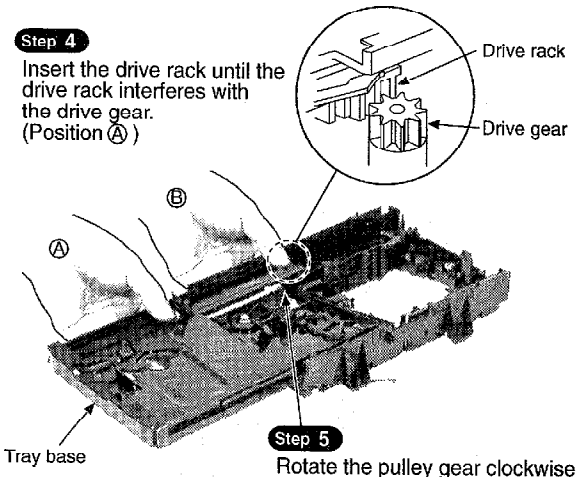
Step 1
Pull the drive rack in the direction of arrow (➡) fully.

Step 2
Slide the carrier in the direction of arrow (➡).

Step 3
Insert the tray base to the mechanism base ass'y with keeping the procedures **Step 1** and **Step 2**.



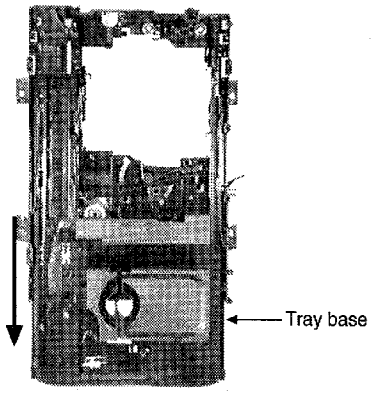
Step 4
Insert the drive rack until the drive rack interferes with the drive gear.
(Position Ⓐ)



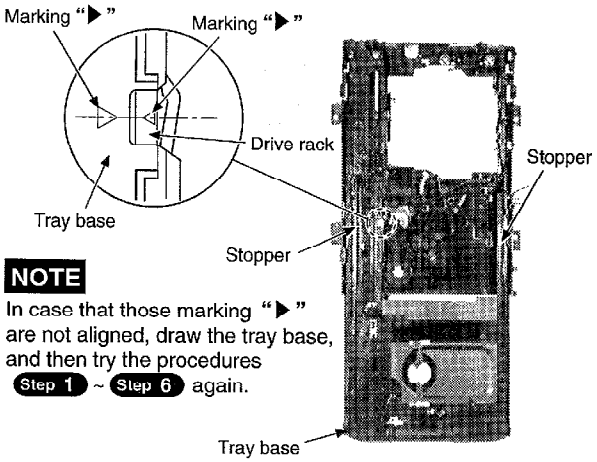
Step 5
Rotate the pulley gear clockwise gently by hand (5 or 6 times).

NOTE
When the gear begins to rotate, rotate the pulley gear with finger pressure (position Ⓑ) because the drive rack gear will fall free.

Step 6
Allow the tray base be open manually.
(Draw the inserted tray base forward.)



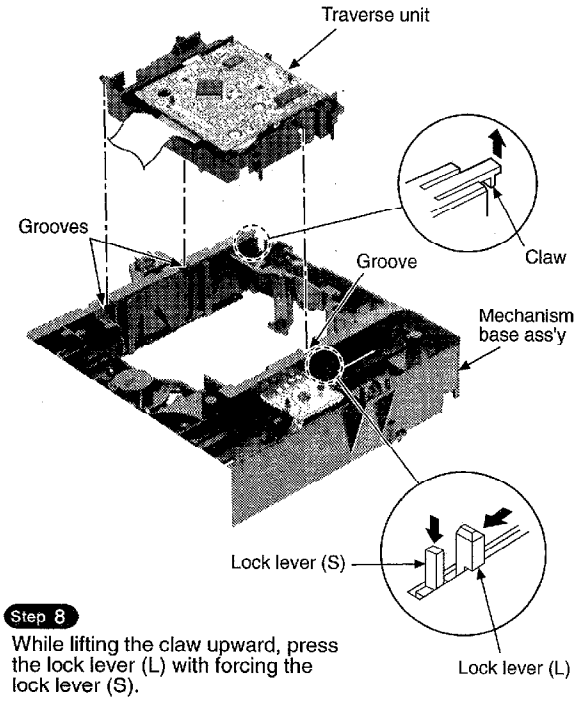
Step 7
Align the marking "▶" of tray base with thea of drive rack.



NOTE
In case that those marking "▶" are not aligned, draw the tray base, and then try the procedures **Step 1** ~ **Step 6** again.

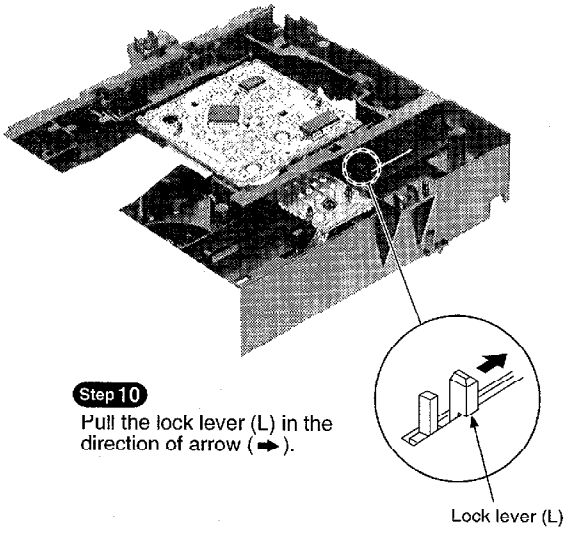
Step 9

Align the boss of traverse unit with the groove of mechanism base ass'y.



Step 8

While lifting the claw upward, press the lock lever (L) with forcing the lock lever (S).

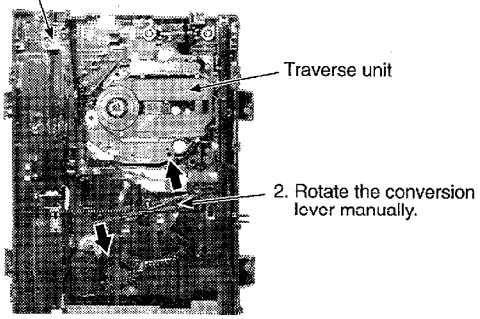


Step 10

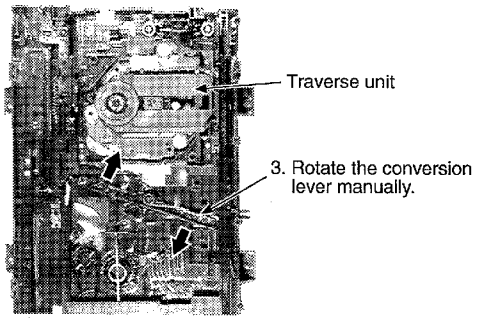
Pull the lock lever (L) in the direction of arrow (➡).

• After assembly, confirm the traverse unit operation.

1. Release the lock lever manually.



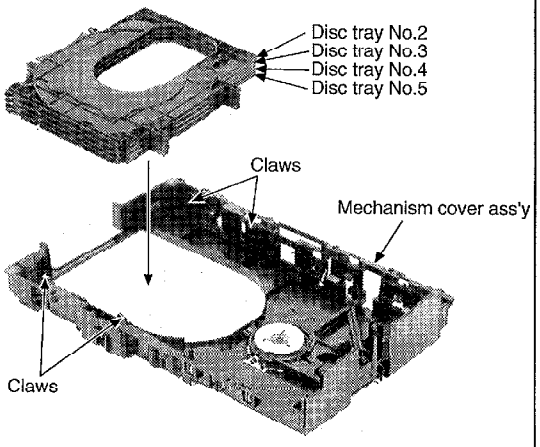
〈"DOWN" stated〉



〈"UP" stated〉

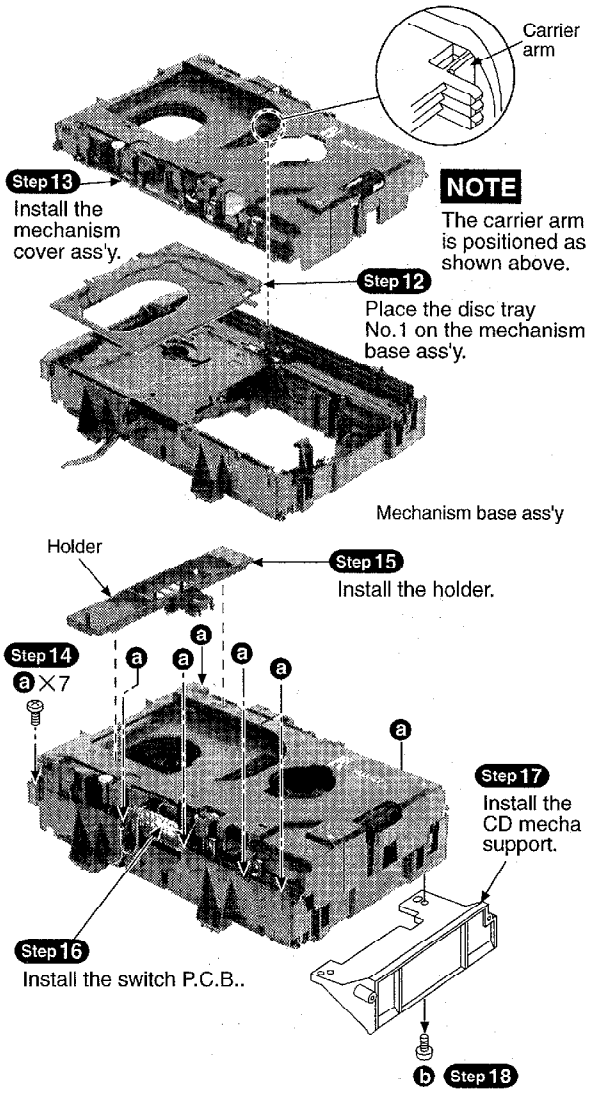
Step 11

Install the 4 disc trays to the mechanism cover ass'y (Allow them to lock with claws.)



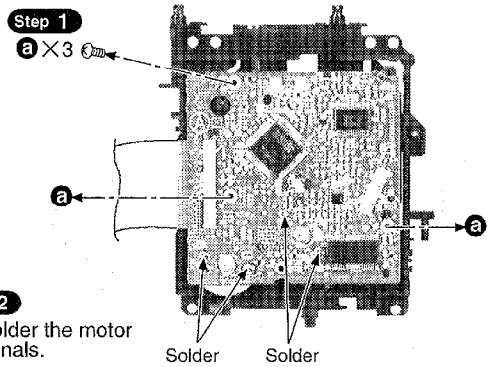
NOTE

Install the disc trays in specific order.
(Disc tray No. is indicated the tray.)

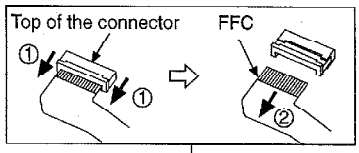


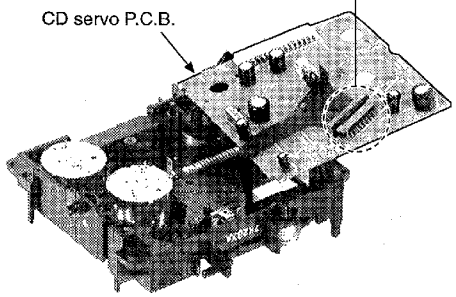
5. Replacement for the traverse deck ass'y

- Follow the Step 1 ~ Step 3 of the item 1 in checking procedure for each P.C.B. on page 40.
- Follow the Step 1 ~ Step 12 of the item 2 in checking procedure for each P.C.B. on page 41.

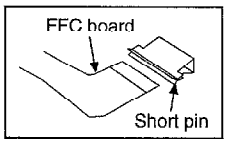


Step 3
Remove the FFC from the connector, and then remove the CD servo P.C.B..

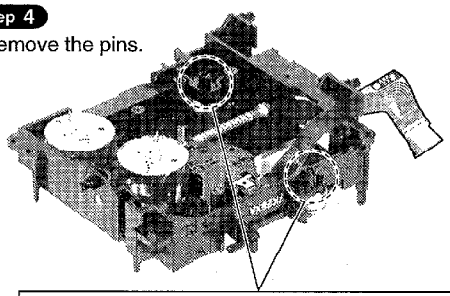


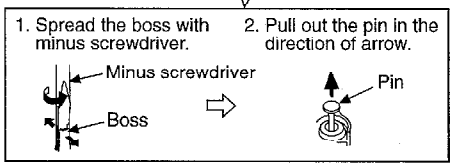


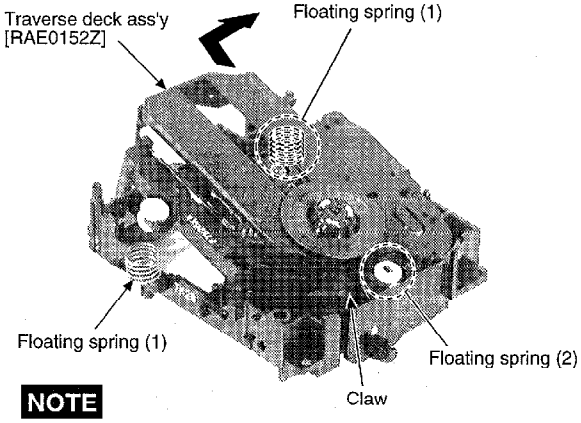
Caution:
Insert a short pin into the traverse unit FFC board.
(Refer to "Handling Precautions for Traverse Deck" on page 3.)



Step 4
Remove the pins.

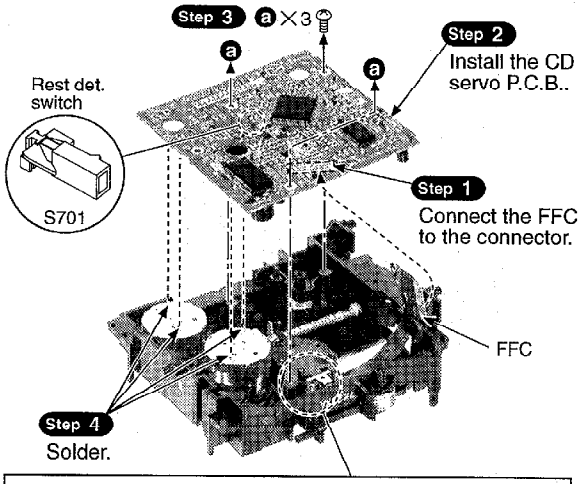


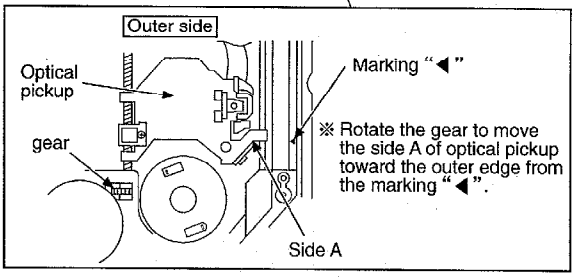




NOTE
Be careful not to lose the 3 springs because those will also be removed on removal of the traverse deck ass'y.

Installation of the CD servo P.C.B.




Outer side
Optical pickup
gear
Marking "◀"
※ Rotate the gear to move the side A of optical pickup toward the outer edge from the marking "◀".
Side A

NOTE

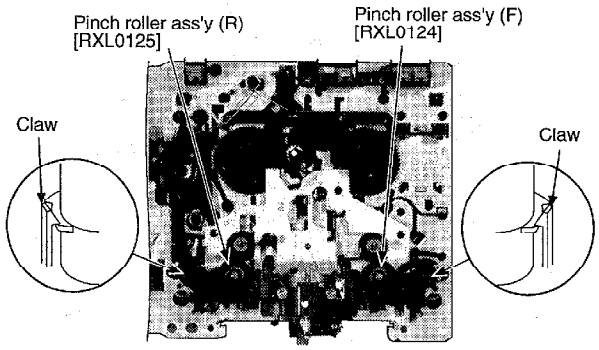
Before installing the CD servo P.C.B., move the optical pickup toward the outer edge from mark "◀".
[In case that the optical pickup is not moved toward the outer edge from the marking, the rest detect switch (S701) mounted on the CD servo P.C.B. may be damaged.]

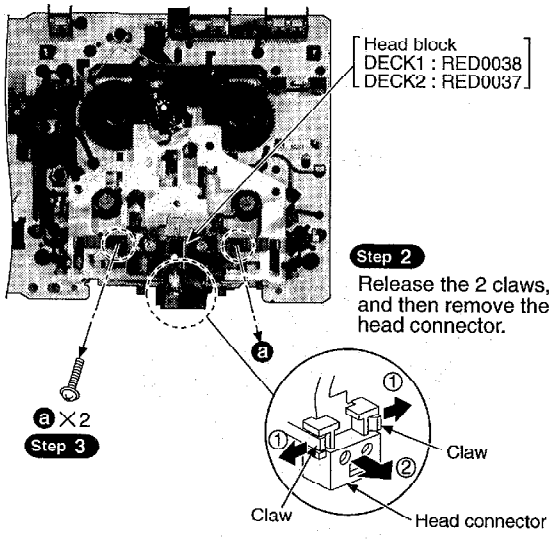
6. Replacement for the pinch roller ass'y and head block

- Follow the Step 1 ~ Step 3 of the item 1 in checking procedure for each P.C.B. on page 40.
- Follow the Step 1 ~ Step 7 of the item 2 in checking procedure for each P.C.B. on page 41.
- Follow the Step 1 ~ Step 7 of the item 4 in checking procedure for each P.C.B. on page 44.

Step 1

Release the 2 claws, and then remove the pinch roller (R), (F).



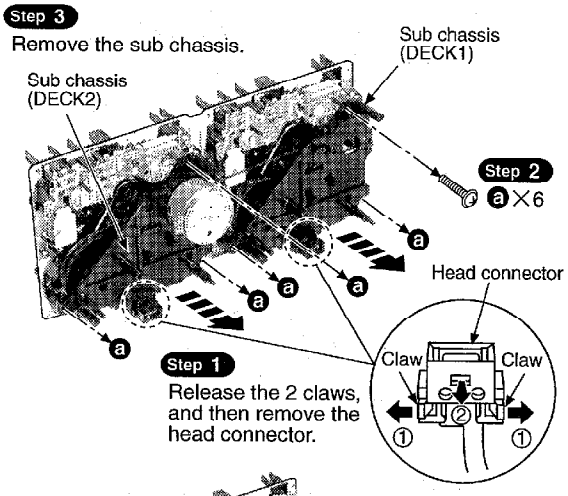


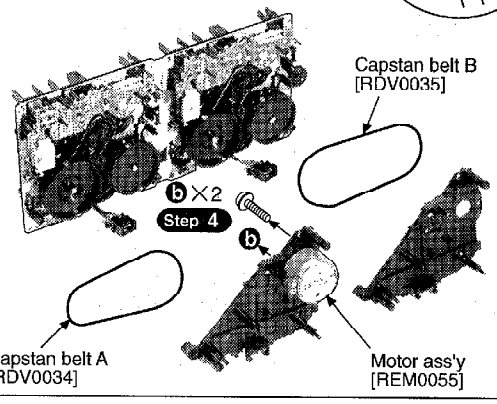
7. Replacement for the motor ass'y capstan belt A, capstan belt B and winding belt

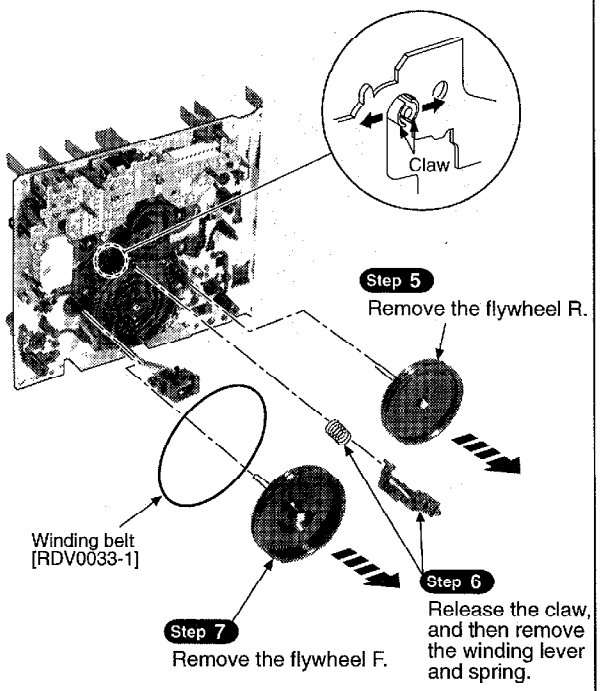
- Follow the Step 1 ~ Step 3 of the item 1 in checking procedure for each P.C.B. on page 40.
- Follow the Step 1 ~ Step 7 of the item 2 in checking procedure for each P.C.B. on page 41.
- Follow the Step 1 ~ Step 7 of the item 4 in checking procedure for each P.C.B. on page 44.

Step 3

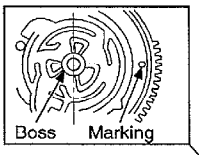
Remove the sub chassis.



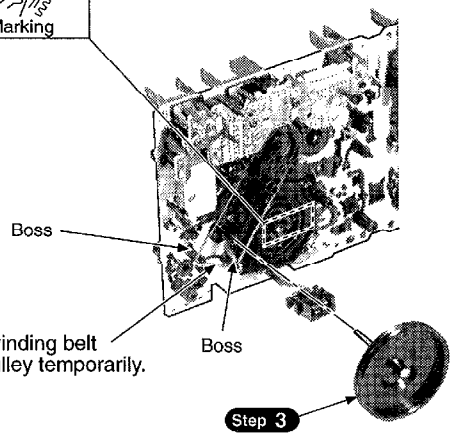




Installation of the belt

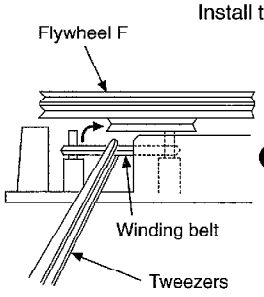


Step 1
The boss and marking should be positioned horizontally.



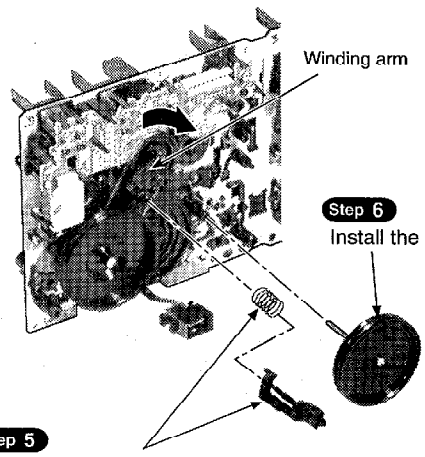
Step 2
Put the winding belt on the pulley temporarily.

Step 3
Install the flywheel F.



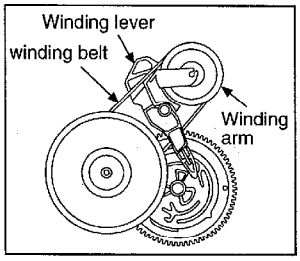
Step 4
Put the winding belt on the flywheel F.

NOTE
Take care not stick the grease on the belt.

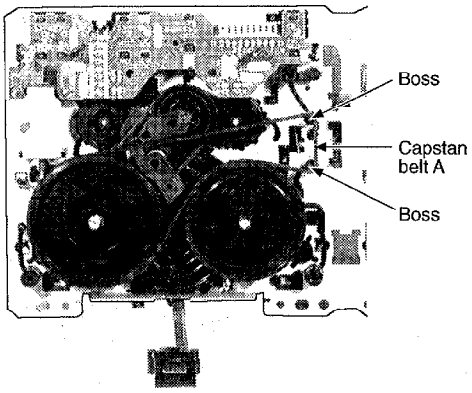


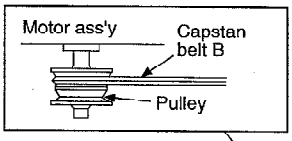
Step 5
Install the winding lever and spring while pressing the winding arm in the direction of arrow.
(The winding lever must be inserted completly and latched with claws.)

NOTE
The winding lever should be positioned as shown right.



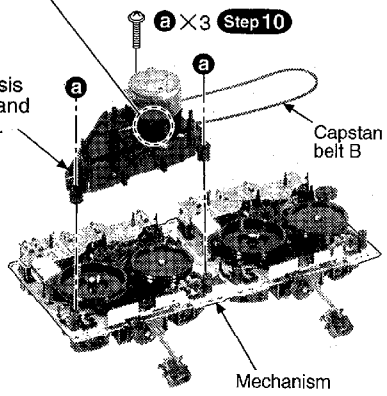
Step 7
Put the capstan belt A temporarily as shown below.



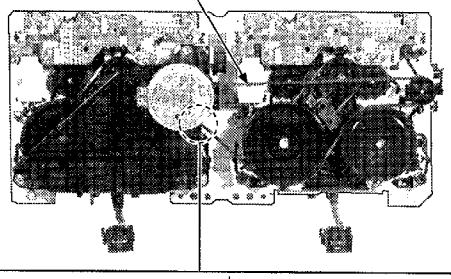


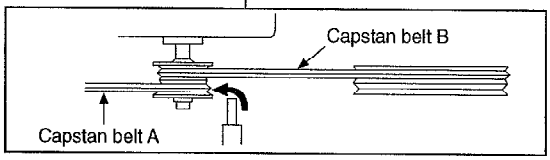
Step 8
Put the capstan belt B on the motor ass'y pulley.

Step 9
Install the sub chassis to the mechanism, and then tighten screws.



Step 11
Put the capstan belt B as shown below.

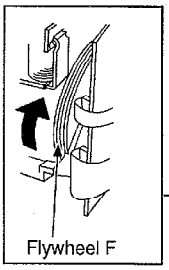


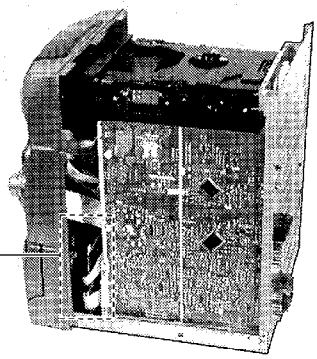


Step 12
Put the capstan belt A on the motor ass'y pulley.

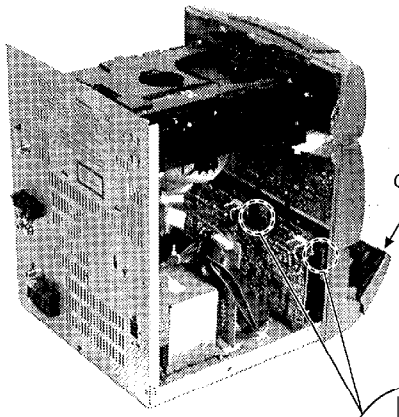
■ Measure for Tape Trouble

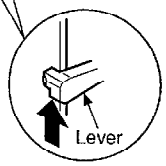
· Follow the **Step 1** ~ **Step 3** of the item 1 in checking procedure for each P.C.B. on page 40.





Step 1
If a cassette tape cannot be removed from the deck since the tape is caught by the capstan or pinch roller during playback or recording, rotate the flywheel F in the direction of arrow to remove the tape.





Step 2
Push the lever upward and open the cassette lid ass'y.

Step 3
Take the cassette tape off.

■ Schematic Diagram

	Page
A CD SERVO CIRCUIT	54, 55
B TUNER CIRCUIT	56, 57
C MECHANISM CONTROL CIRCUIT	58 – 61
D MECHANISM (DECK2) CIRCUIT	60
E MECHANISM (DECK1) CIRCUIT	60
F VIDEO CIRCUIT	62, 63
G JOG DIAL CIRCUIT	64
H OPERATION CIRCUIT	64
I FL CIRCUIT	64 – 69
J MAIN CIRCUIT	70 – 77
K LOADING MOTOR CIRCUIT	73
L SWITCH CIRCUIT	73
M SWITCH (S2, S3) CIRCUIT	73
N POWER AMP CIRCUIT	78, 79
O POWER TRANSFORMER CIRCUIT	79, 80
P POWER SUPPLY CIRCUIT	79, 80
Q VOLTAGE SELECTOR CIRCUIT	80

Notes :

(This schematic diagram may be modified at any time with the development of new technology.)

- S1 : Stocker position detect switch.
- S2 : Play position detect switch.
- S3 : Up position detect switch.
- S4 : Tray open detect switch.
- S5 : Disc number detect switch.
- S501 : Voltage adjust switch in 220 position. [(GC) area only]
- S701 : Rest switch. (REST)
- S901 : Tuner/band select switch. (TUNER BAND)
- S901A : Video out mode select switch. (VIDEO OUT SWITCH)
- S902 : Playback/pause, tuning, time adjust switch. (◄/II, ∨ TUNE/TIME ADJ)
- S903 : CD switch. (CD)
- S904 : Playback, tuning, time adjust Video CD select switch. (►, TUNE/TIME ADJ ∧,SELECT)
- S905 : Tape/deck select switch. (TAPE, DECK 1/2)
- S906 : Display select/demonstration switch. (-DISPLAY/–DEMO)
- S907 : Echo switch. (ECHO)
- S908 : Stop/tune mode/Video CD menu switch. (■/TUNE MODE/MENU)
- S909 : AUX select switch. (AUX)
- S911 : Karaoke switch. (KRAOKE)
- S912 : FF/skip, memory/Video CD next switch. (►►/►►I, MEMORY/NEXT)
- S913 : Clock/timer select switch. (CLOCK/TIMER)
- S914 : REW/R.skip, FM mode/beat proof/Video CD previous switch. (I◄◄/◄◄, FM MODE/BP/PREV)
- S915 : Play timer/record timer switch. (⏲PLAY/⏲REC)
- S916 : Disc tray open/close switch. (▲ OPEN/CLOSE)
- S917 : Deck1 open switch. (▲ OPEN DECK1)
- S918 : CD manager switch. (CD MANAGER)
- S919 : Next tray open switch. (▲ NEXT OPEN)
- S920 : Tape edit switch. (TAPE EDIT)
- S921 : Disc select switch. (DISC 5)
- S922 : Random play switch. (RANDOM)
- S923 : Recording start/stop switch. (● REC/STOP)
- S924 : Disc select switch. (DISC 4)
- S925 : Super woofer switch. (S. WOOFER)
- S926 : Dolby NR switch. (DOLBY NR)
- S927 : Disc select switch. (DISC 3)
- S928 : Reverse mode select switch. (REV MODE)
- S929 : Disc select switch. (DISC 2)
- S930 : Deck2 open switch. (▲ OPEN DECK2)
- S931 : Disc select switch. (DISC 1)
- S932 : Power switch. (POWER)
- S933 : Video CD menu select (smaller) switch. (MENU –)
- S934 : Return to the Video CD menu switch. (↩ RETURN)
- S935 : Super surround switch. (SUPER SURROUND)
- S936 : Video CD menu select (bigger) switch. (MENU +)
- S937 : To raise the key by a halftone switch. (♯)
- S938 : To lower the key by a halftone switch. (♭)
- S939 : Key control switch. (KEY CON)
- S951 : Deck1 mode detect switch. (MODE)
- S952 : Deck1 half detect switch. (HALF)
- S953 : Deck1 CrO_2 tape detect switch. (ATS/CrO_2)
- S971 : Deck2 mode select switch. (MODE)
- S972 : Deck2 half detect switch. (HALF)
- S973 : Deck2 CrO_2 tape detect switch. (ATS/CrO_2)
- S974 : Deck2 reverse side record prevention tab detect switch. (R. REC. INH)
- S975 : Deck2 forward side record prevention tab detect switch. (F. REC. INH)

- VR101,VR102,VR103,VR104 : Playback gain adjustment VR.
- VR901 : Volume control VR. (VOLUME)
- VR902 : Sound equalizer control VR. (SOUND EQ)
- VR903 : Microphone volume control VR. (MIC VOL)

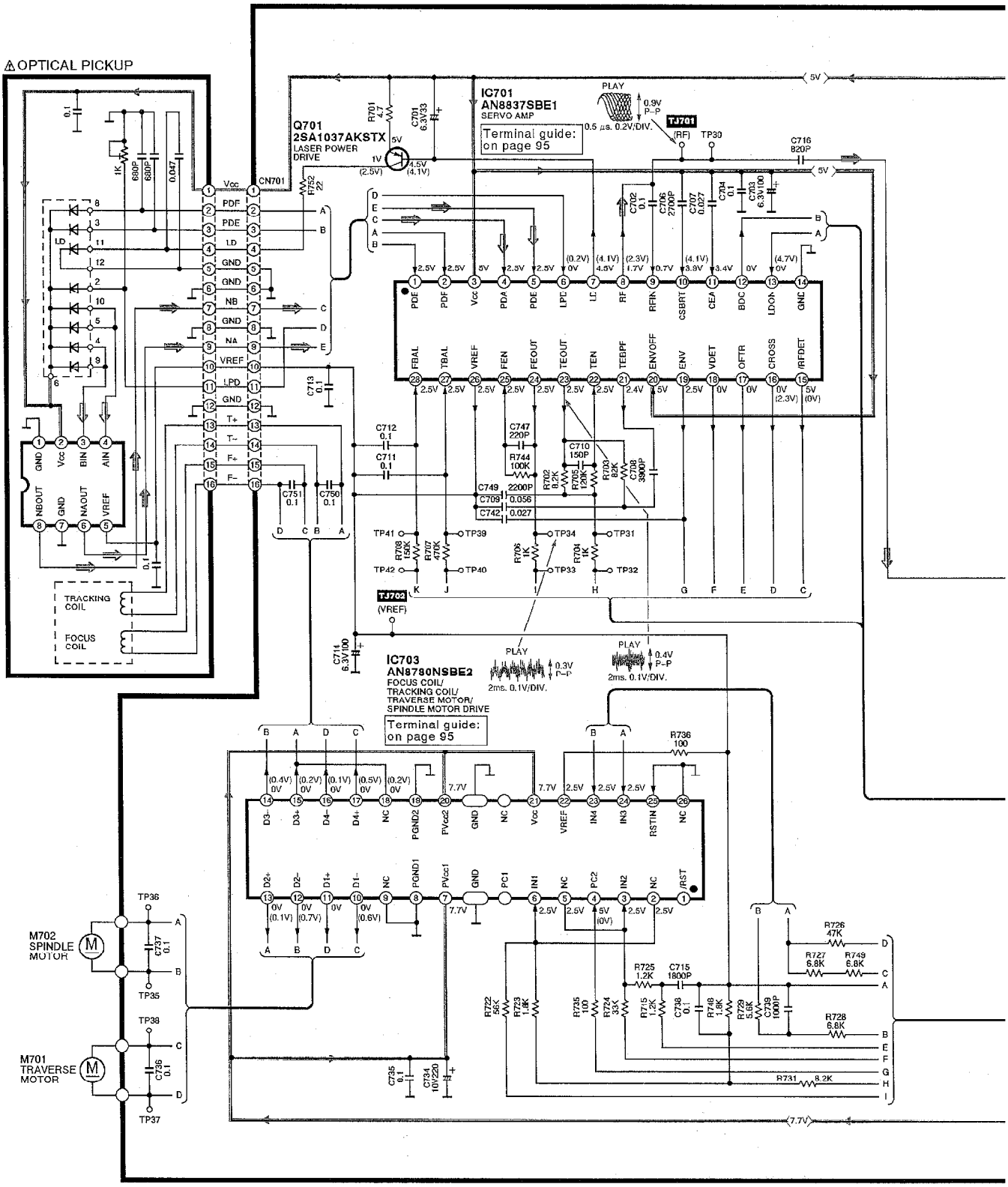
- Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.
  - No mark ..... CD STOP
  - ( ) ..... CD playback (1kHz, L+R, 0dB)
  - < > ..... FM
  - ⌜ ⌟ ..... AM
  - (( )) ..... DECK 2 playback
  - 《 》 ..... DECK 2 record

- Important safety notice:
  Components identified by ⚠ mark have special characteristics important for safety.
  Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used. When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.

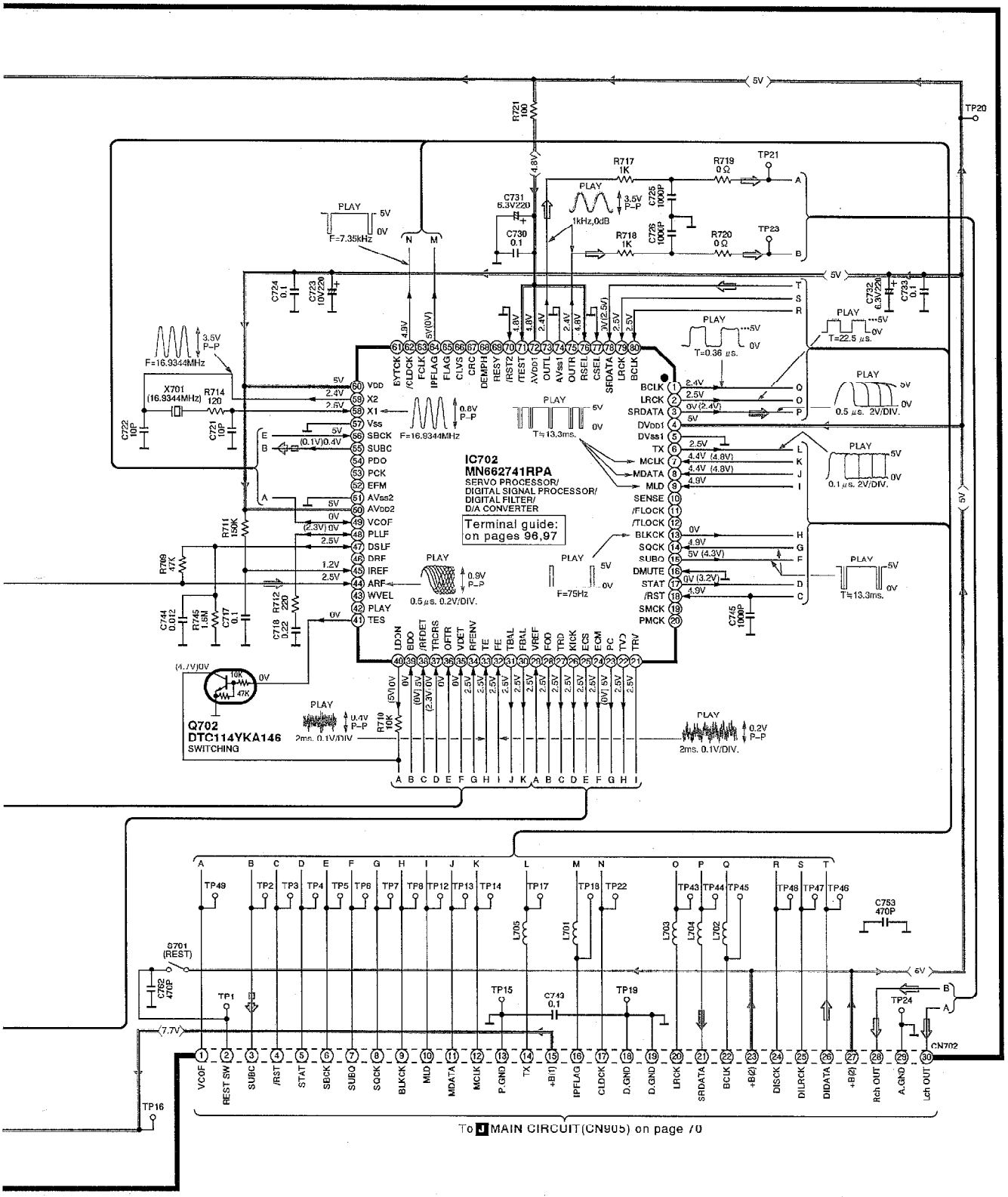
- **Caution!**
  IC and LSI are sensitive to static electricity.
  Secondary trouble can be prevented by taking care during repair.
  Cover the parts boxes made of plastics with aluminum foil.
  Ground the soldering iron.
  Put a conductive mat on the work table.
  Do not touch the legs of IC or LSI with the fingers directly.

- **Voltage and signal line**
  - : Positive voltage line
  - : Negative voltage line
  - : CD-DA/CD-G (AUDIO)/V-CD (AUDIO&VIDEO) signal line
  - : CD-DA/CD-G/V-CD (AUDIO&VIDEO) signal line
  - : CD-DA/CD-G/V-CD (AUDIO) signal line
  - : FM signal line
  - : FM OSC signal line
  - : AM signal line
  - : AM OSC signal line
  - : Record signal line
  - : Playback signal line
  - : MIC signal line
  - : CENTER SP signal line
  - : SURROUND SP signal line
  - : CD-G (VIDEO) signal line
  - : V-CD (VIDEO) signal line

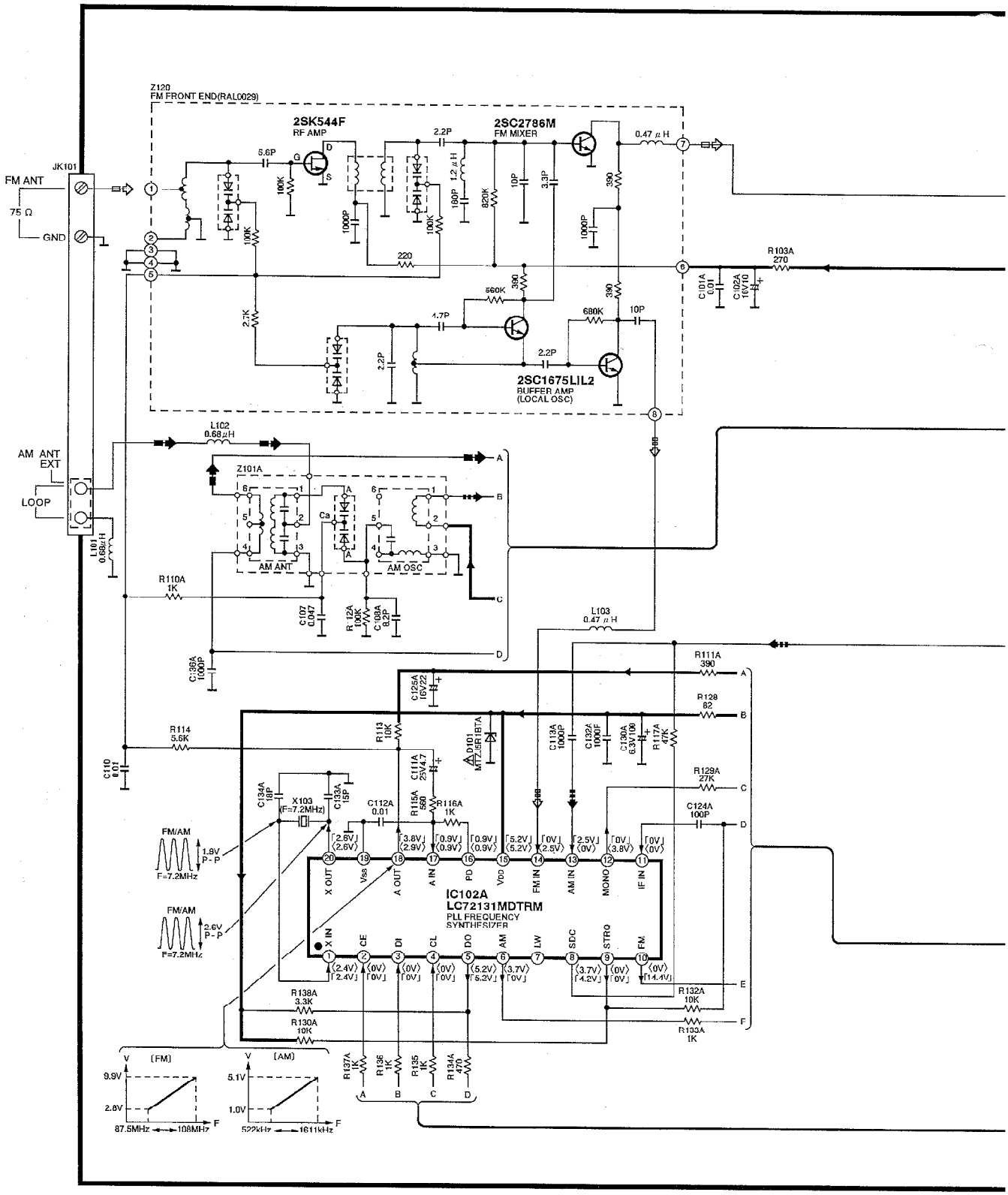
A CD SERVO CIRCUIT (P.C.Board:on page 81)



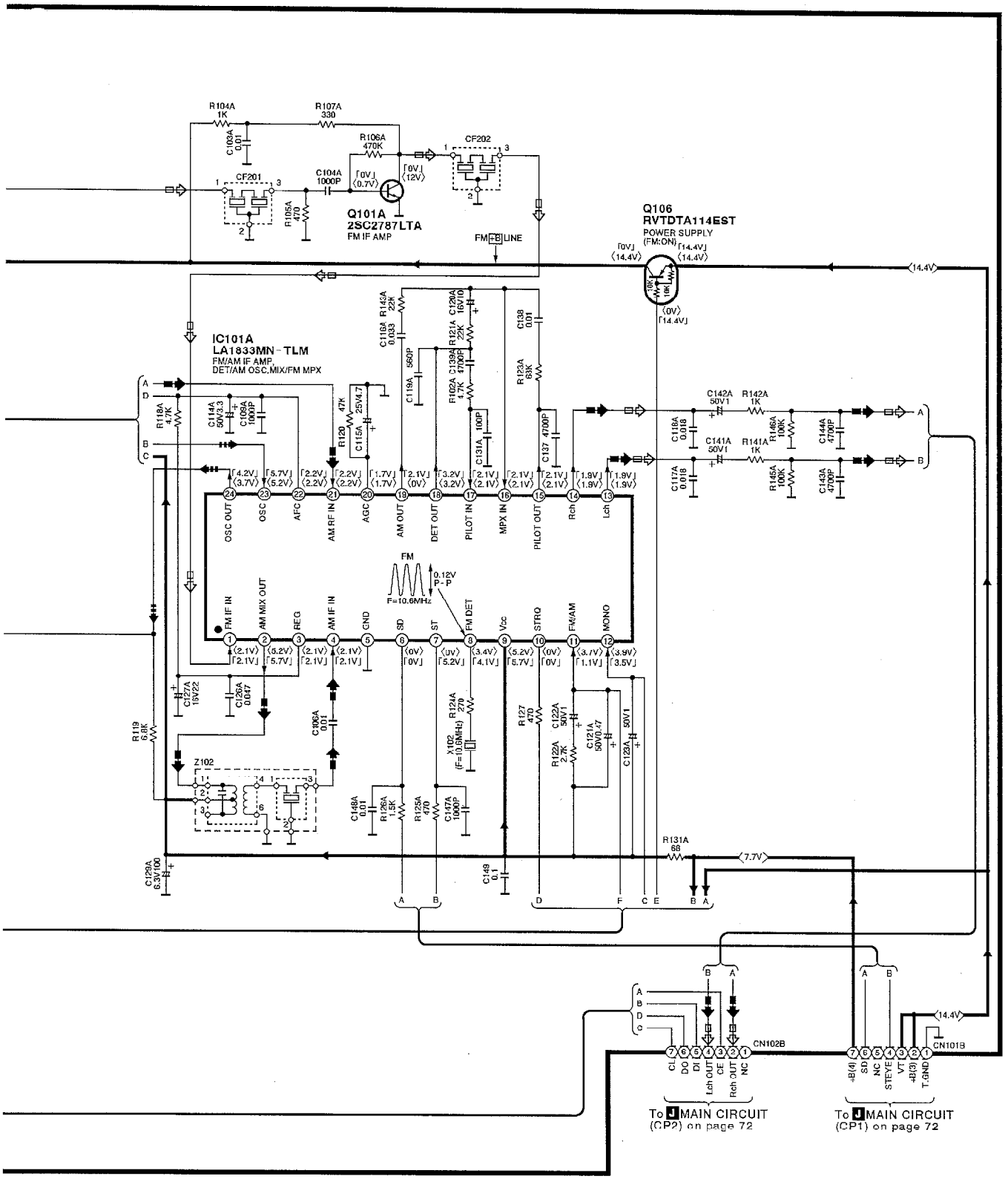
: CD-DA/CD-G/V-CD (AUDIO&VIDEO) signal line
: CD-DA/CD-G/V-CD (AUDIO) signal line
: CD-G (VIDEO) signal line
: CD-DA/CD-G (AUDIO)/V-CD (AUDIO&VIDEO) signal line
: Positive voltage line



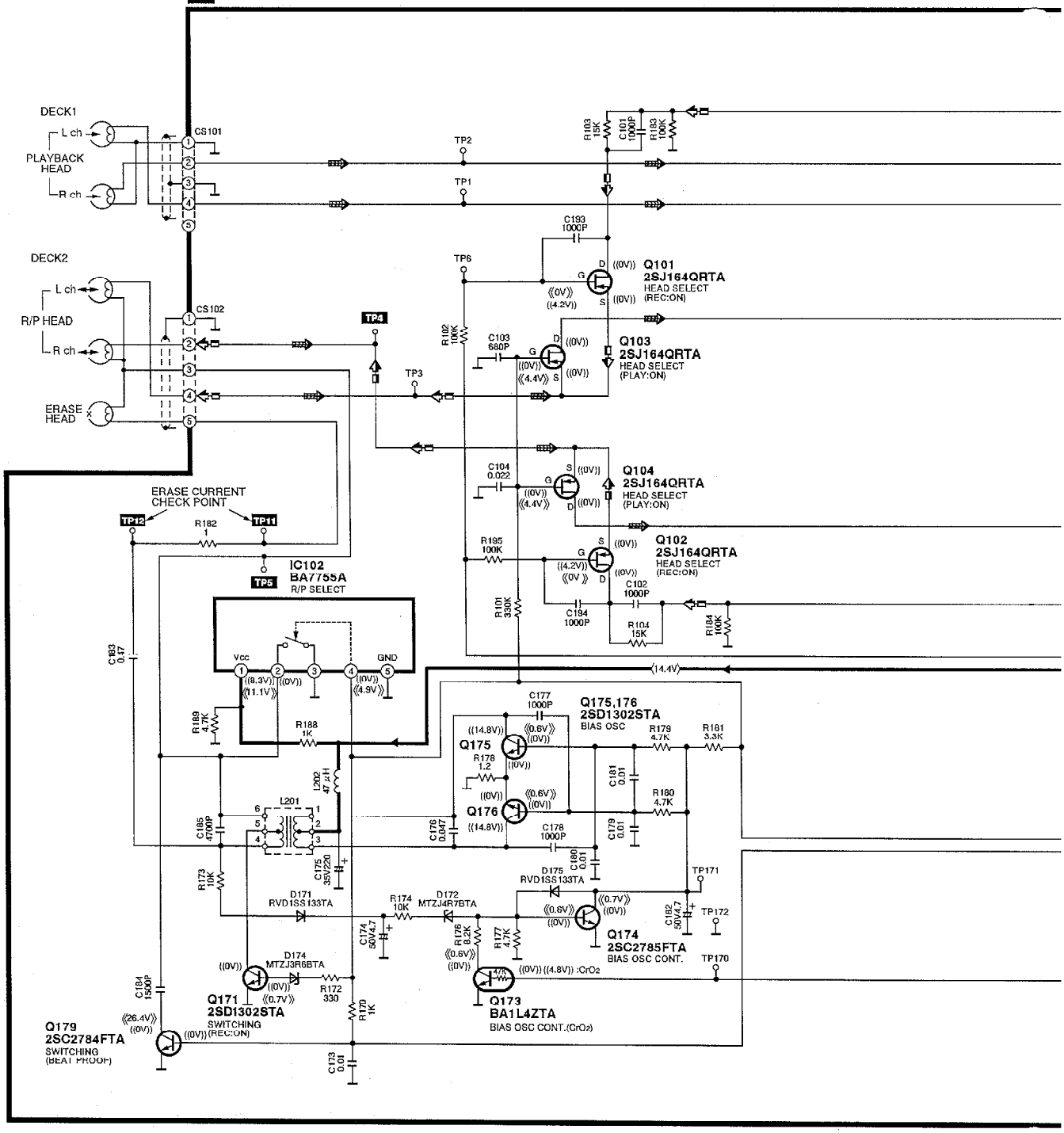
B TUNER CIRCUIT (P.C.Board:on page 82)



: AM signal line
: FM signal line
: AM OSC signal line
: FM OSC signal line
: Positive voltage line



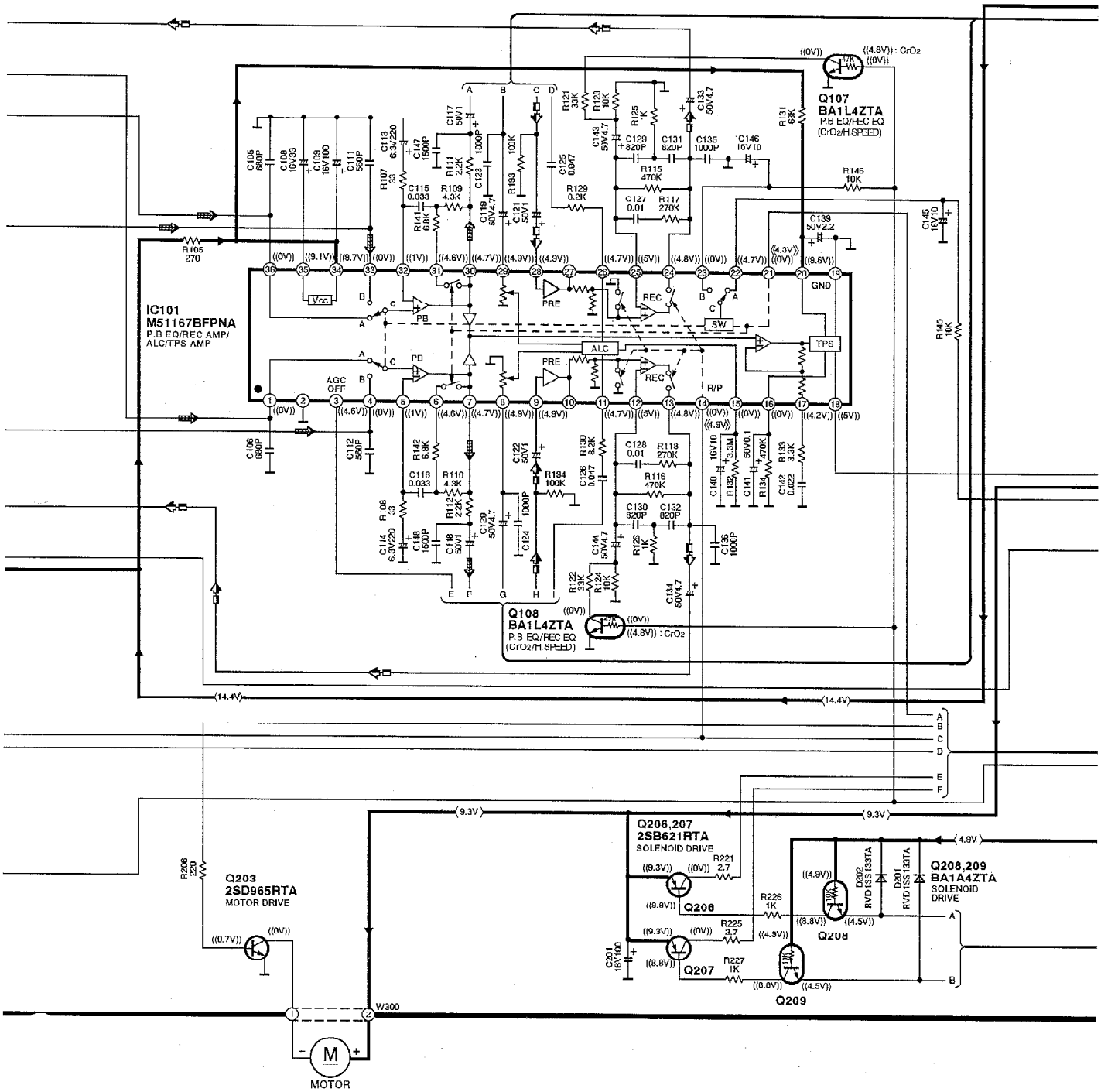
C MECHANISM CONTROL CIRCUIT (P.C.Board:on page 83)



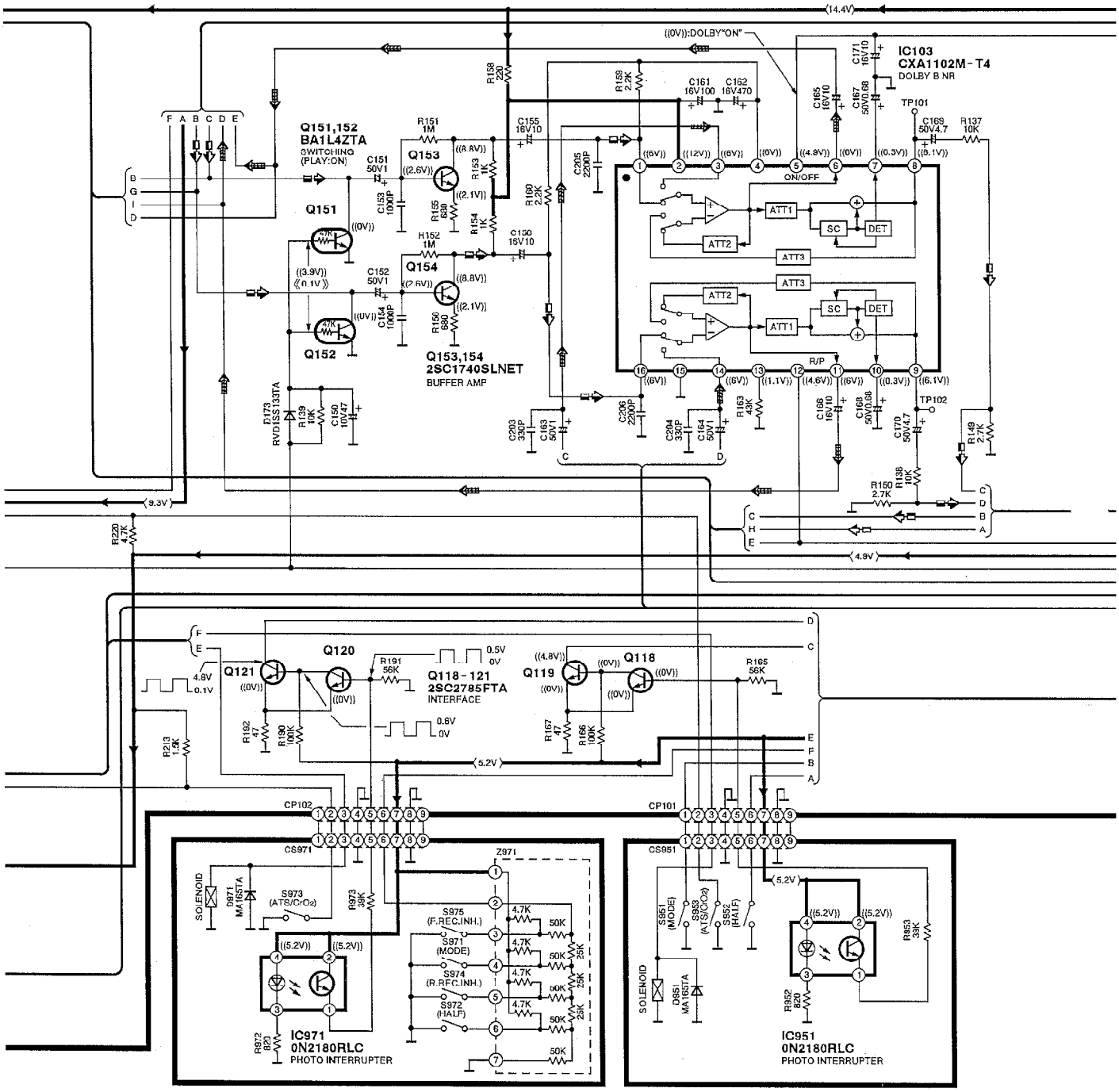
: Playback signal line

: Record signal line

: Positive voltage line



C MECHANISM CONTROL CIRCUIT (P.C.Board:on page 83)



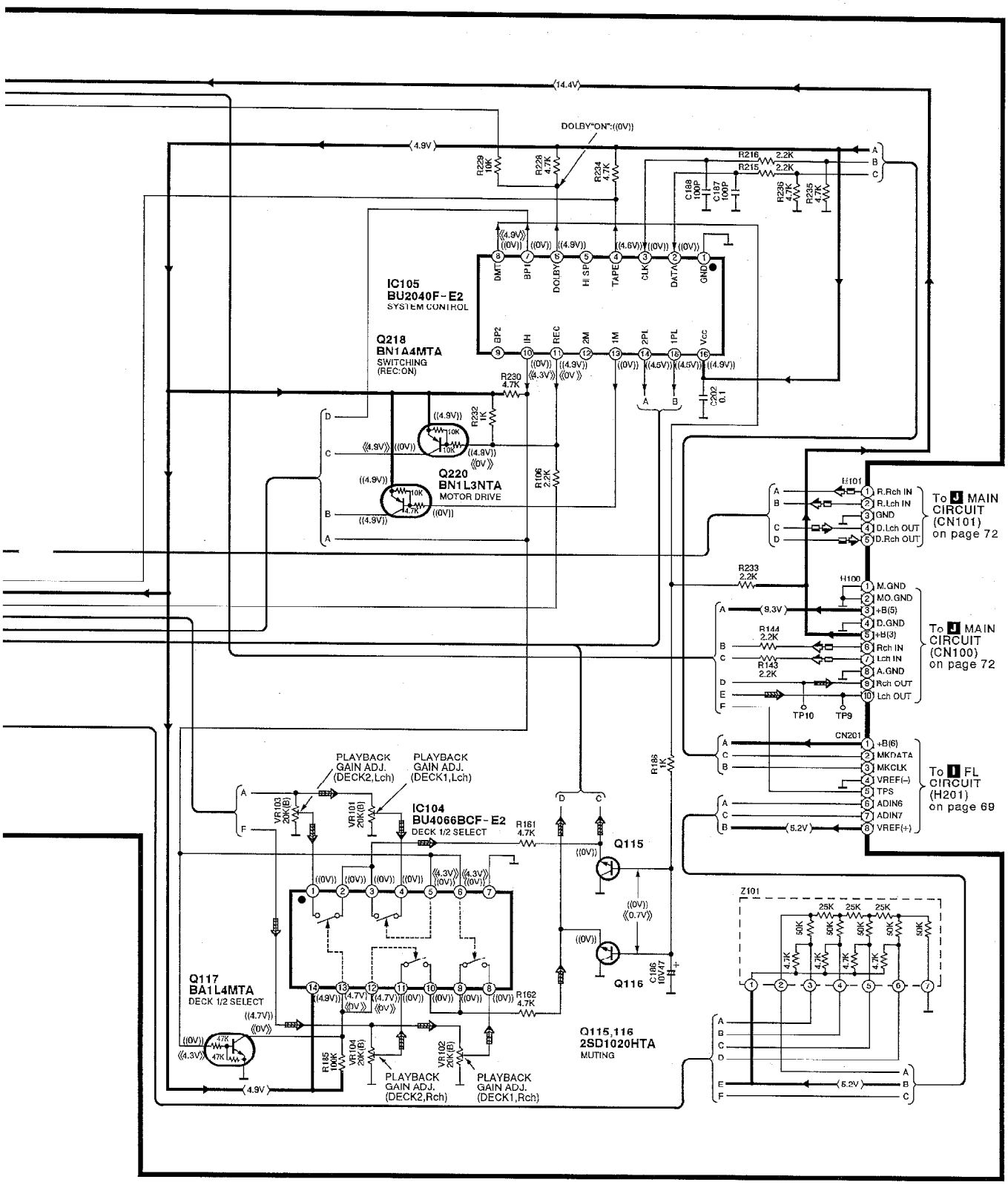
D MECHANISM(DECK2) CIRCUIT
(P.C.Board:on page 81)

E MECHANISM(DECK1) CIRCUIT
(P.C.Board:on page 81)

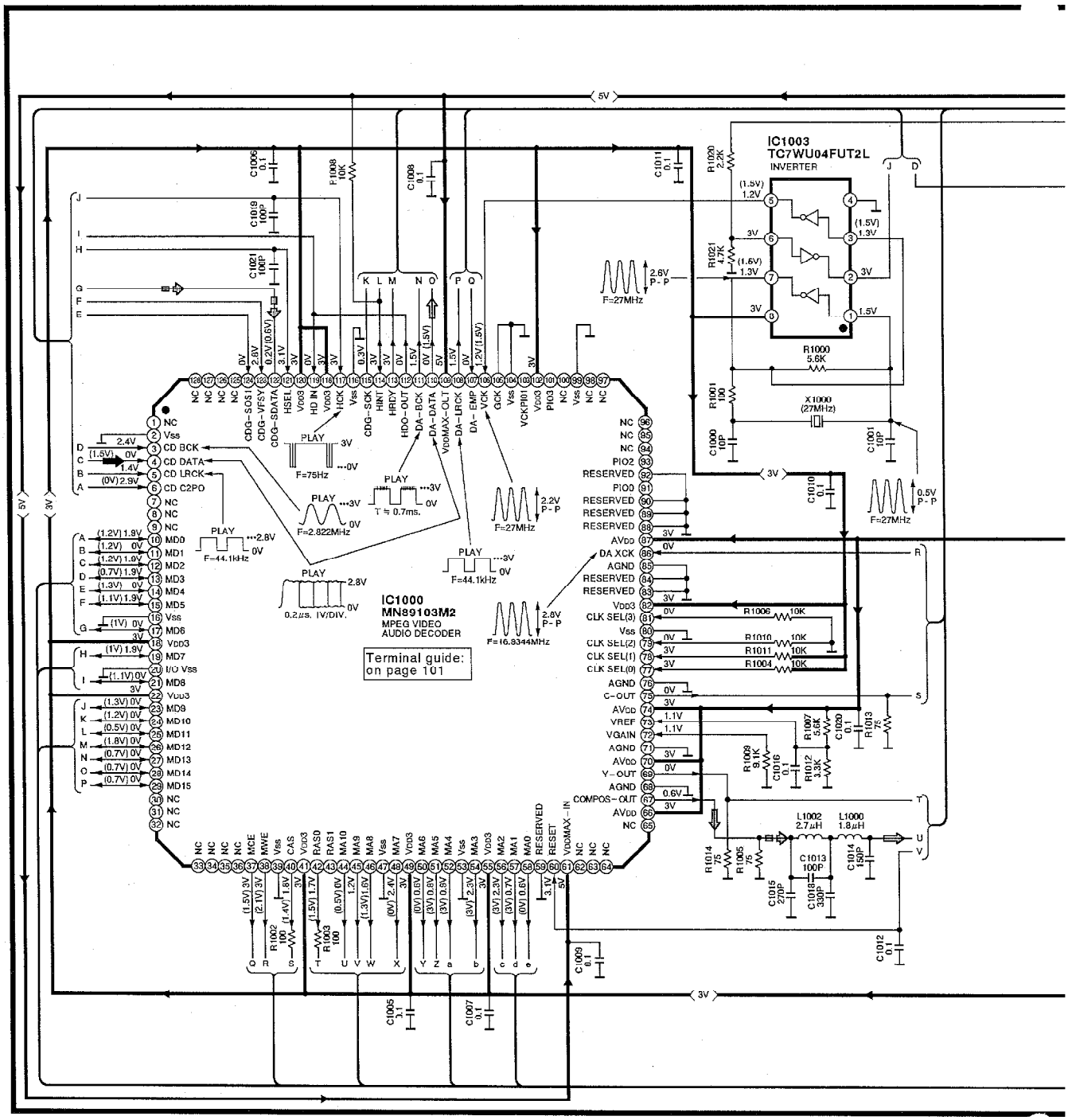
: Playback signal line

: Record signal line

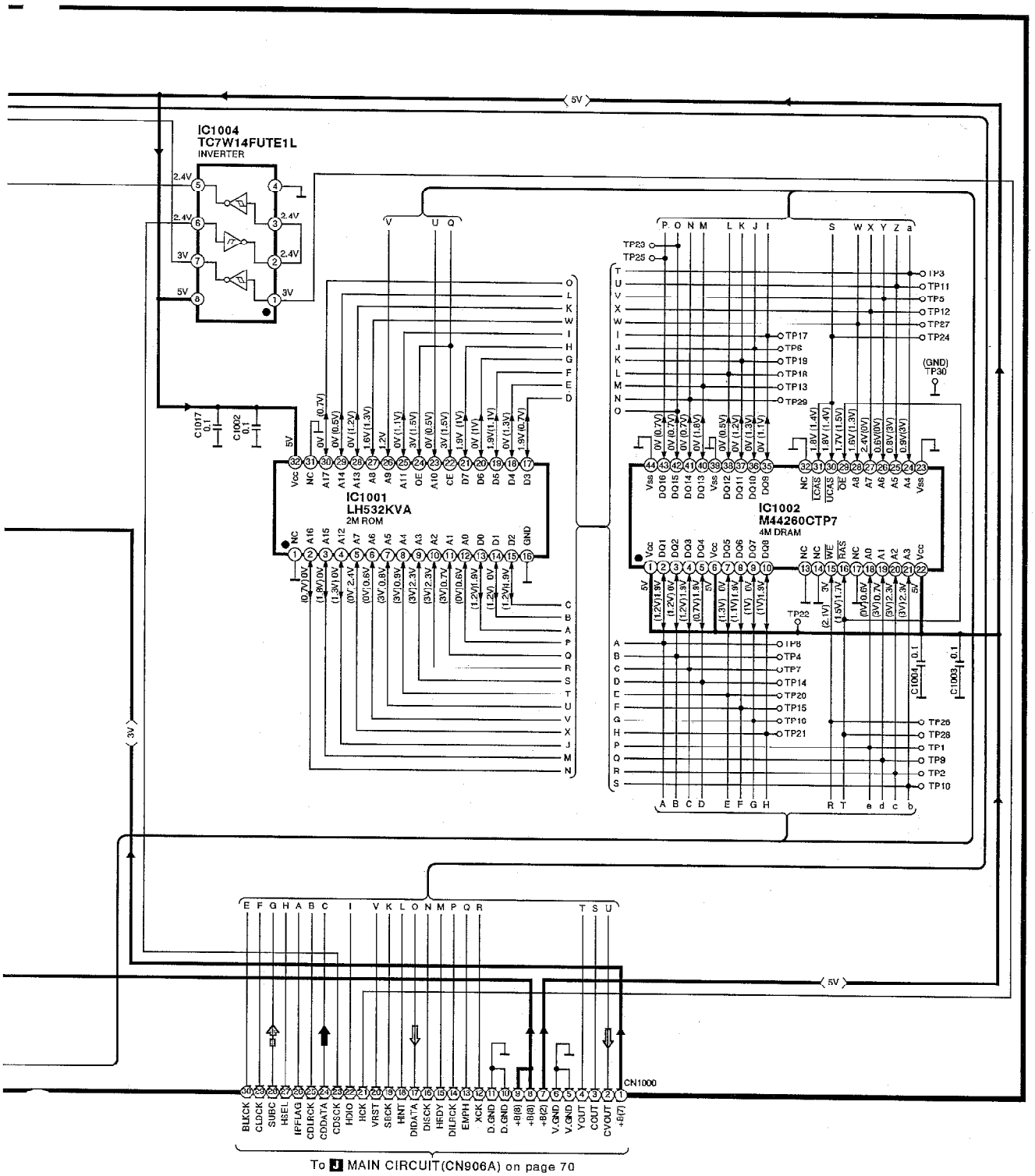
: Positive voltage line



F VIDEO CIRCUIT (P.C.Board:on page 84)



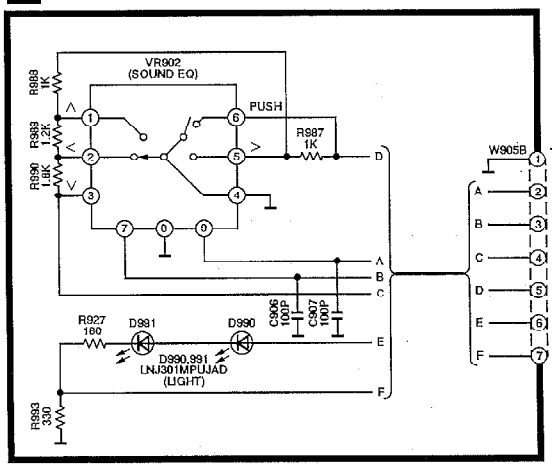
: CD-DA/CD-G (AUDIO)/V-CD (AUDIO&VIDEO) signal line
: CD-DA/CD-G/V-CD (AUDIO) signal line
: CD-G (VIDEO) signal line
: V-CD (VIDEO) signal line
: Positive voltage line



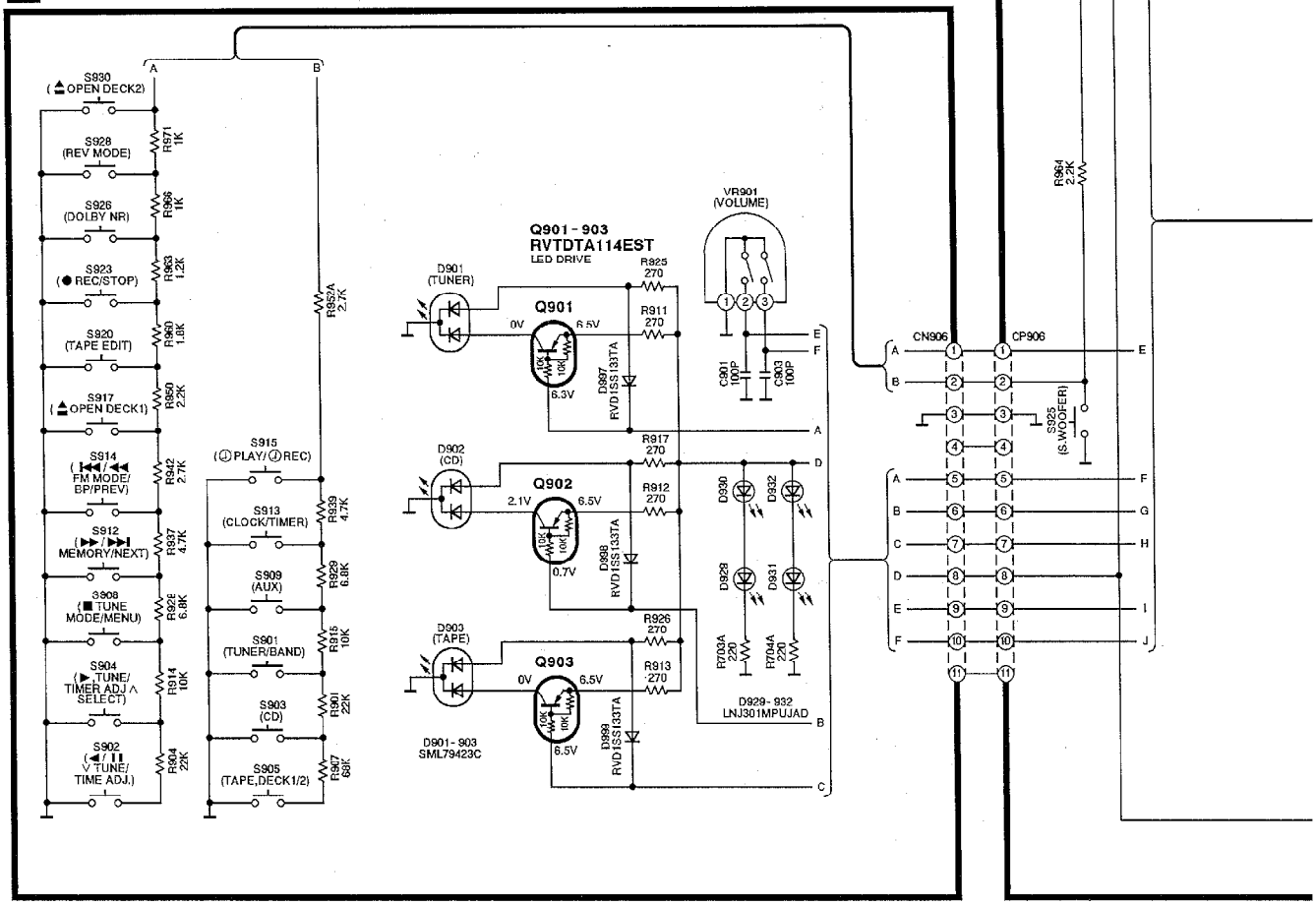
To J MAIN CIRCUIT(CN906A) on page 70

: MIC signal line : Positive voltage line

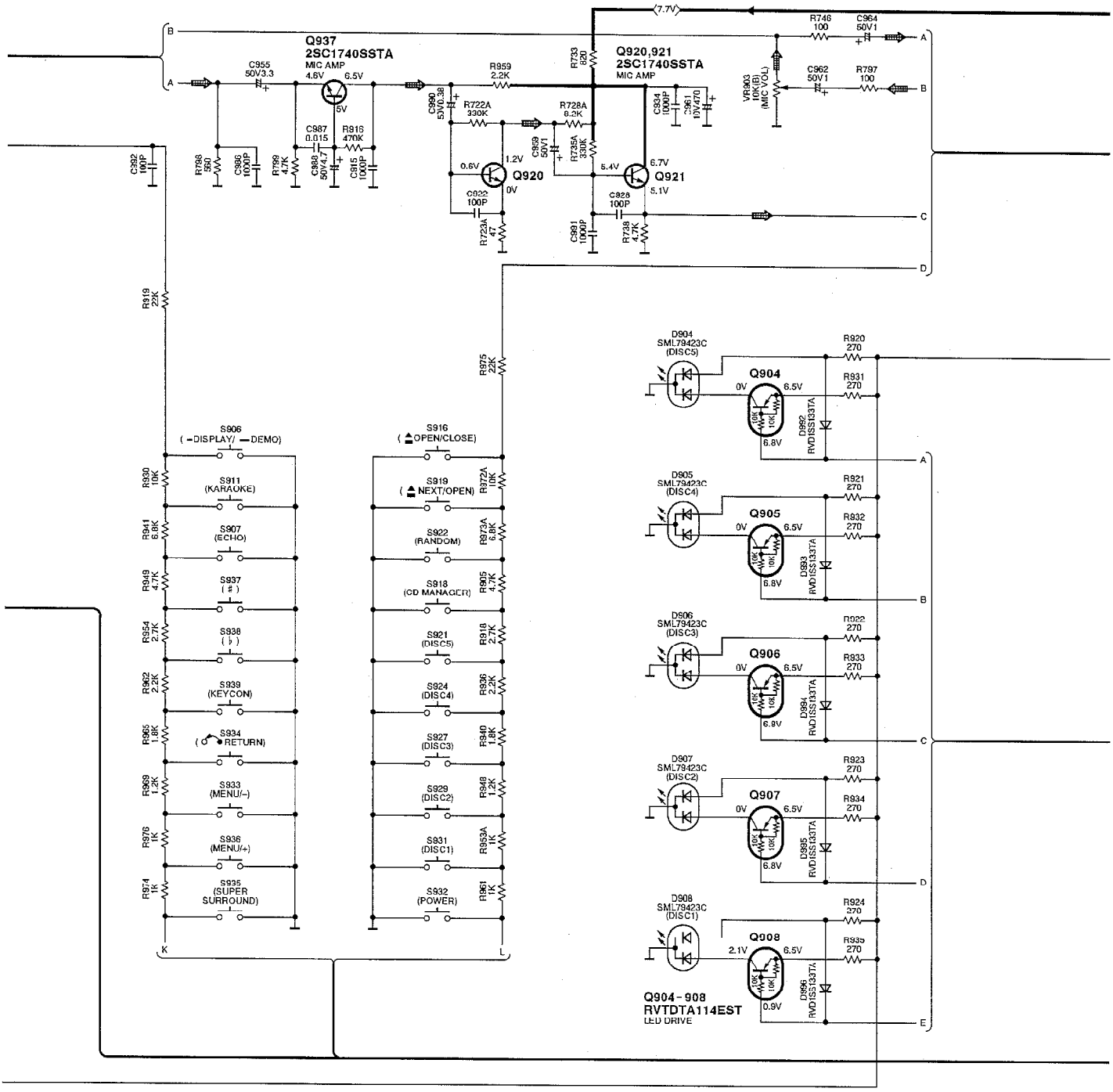
G JOG DIAL CIRCUIT (P.C.Board:on page 84)



H OPERATION CIRCUIT (P.C.Board:on page 82)



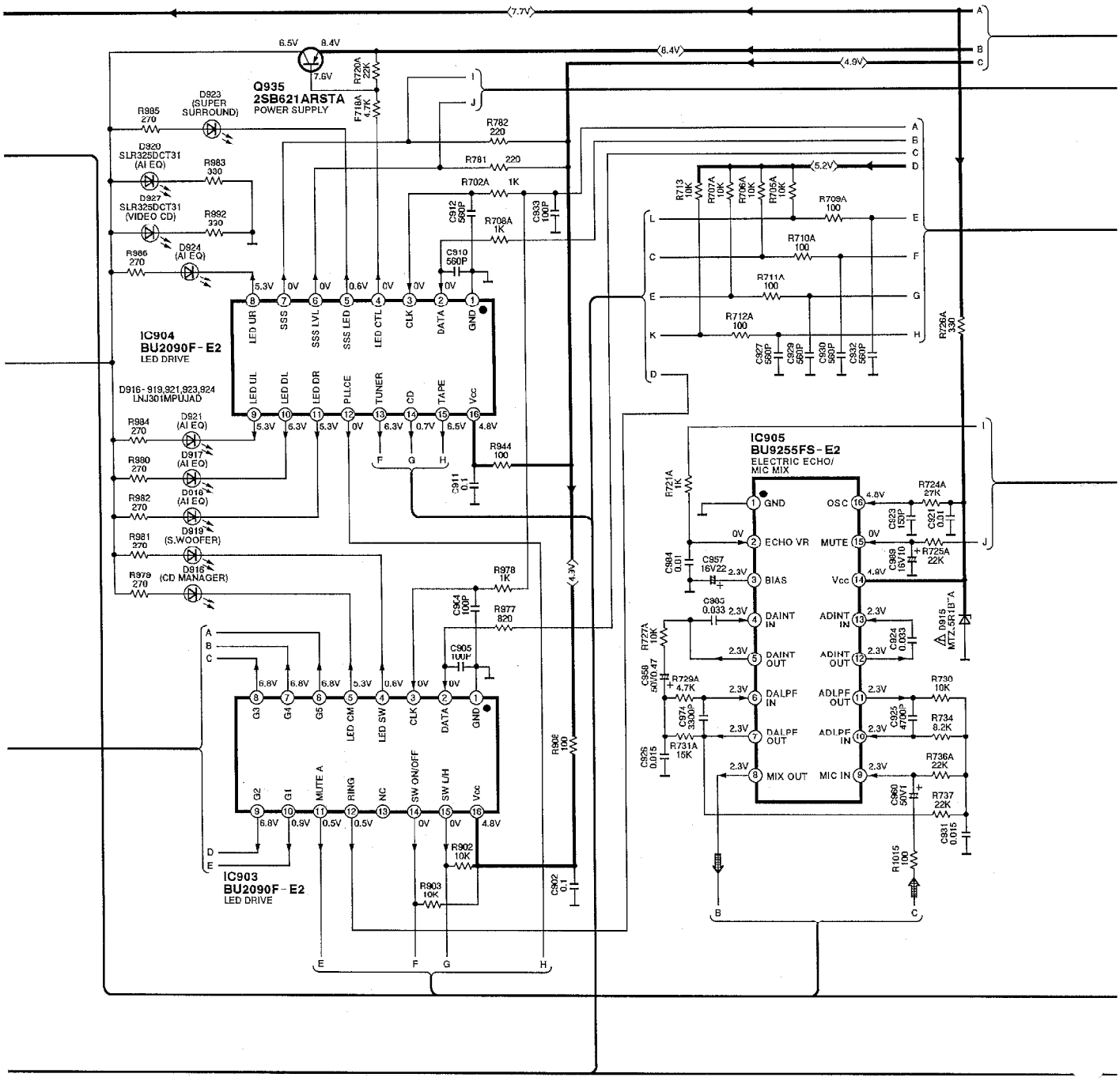
I FL CIRCUIT (P.C.Board:on page 86)



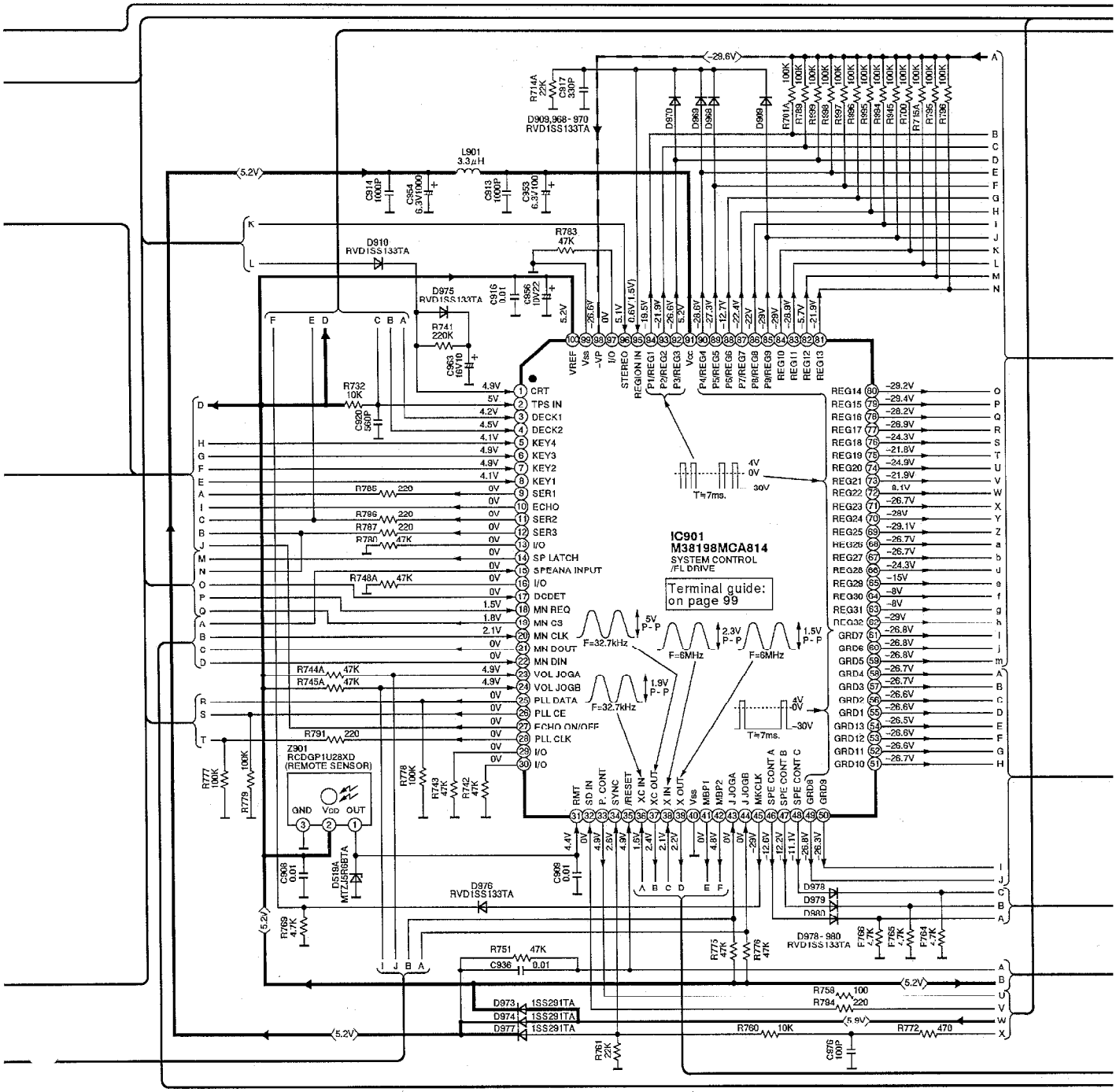
: Positive voltage line

: Negative voltage line

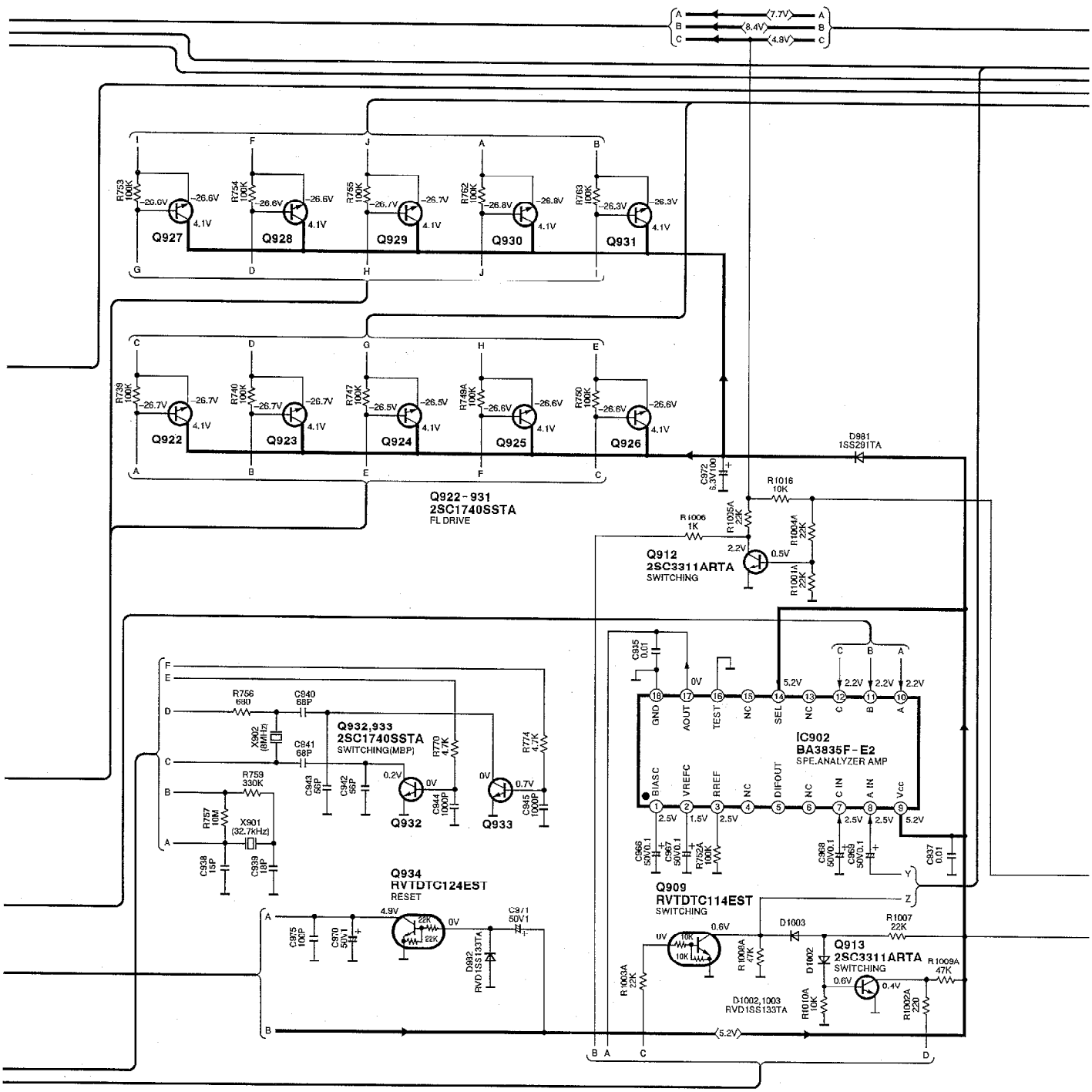
: MIC signal line



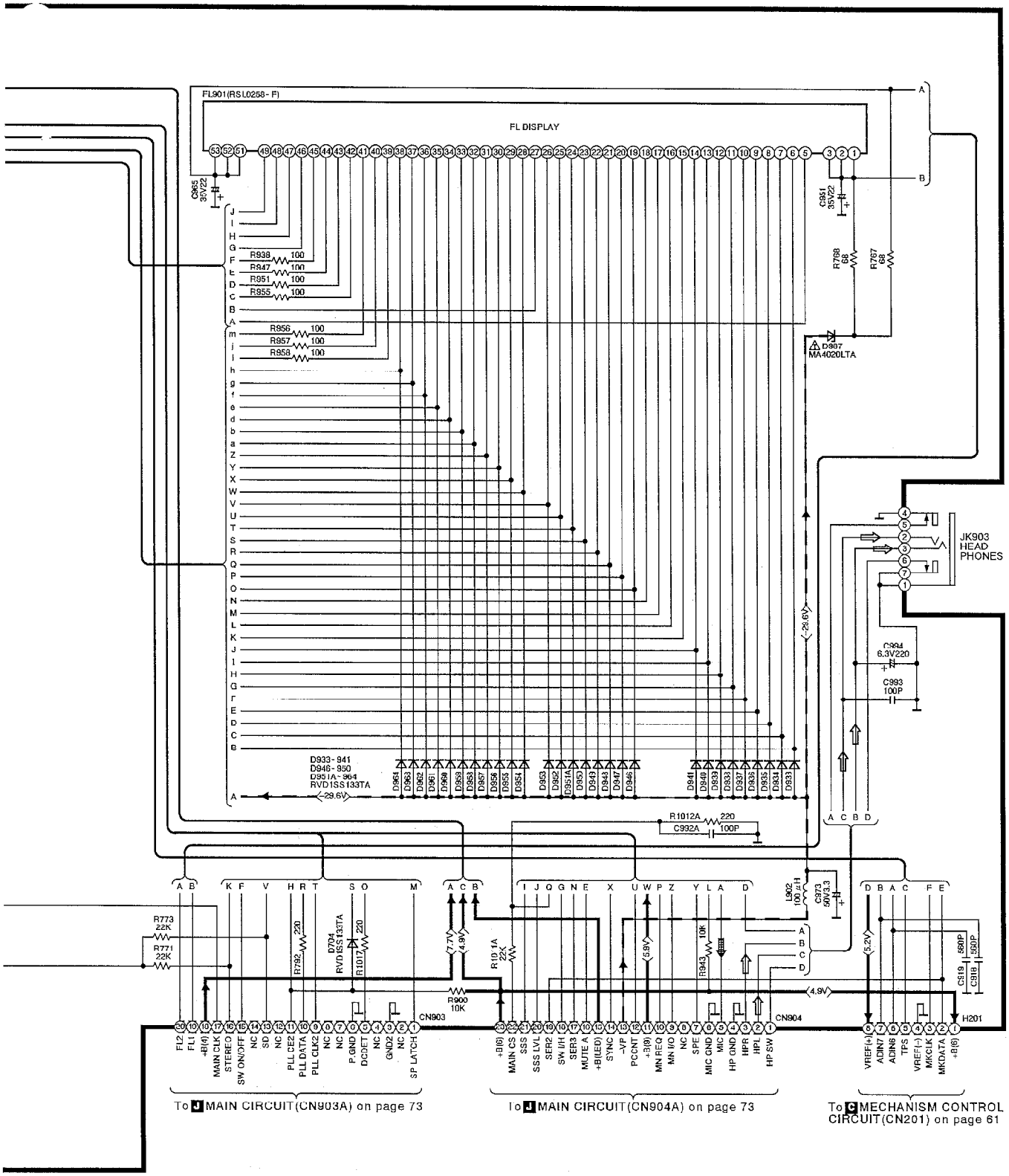
I FL CIRCUIT (P.C.Board:on page 86)



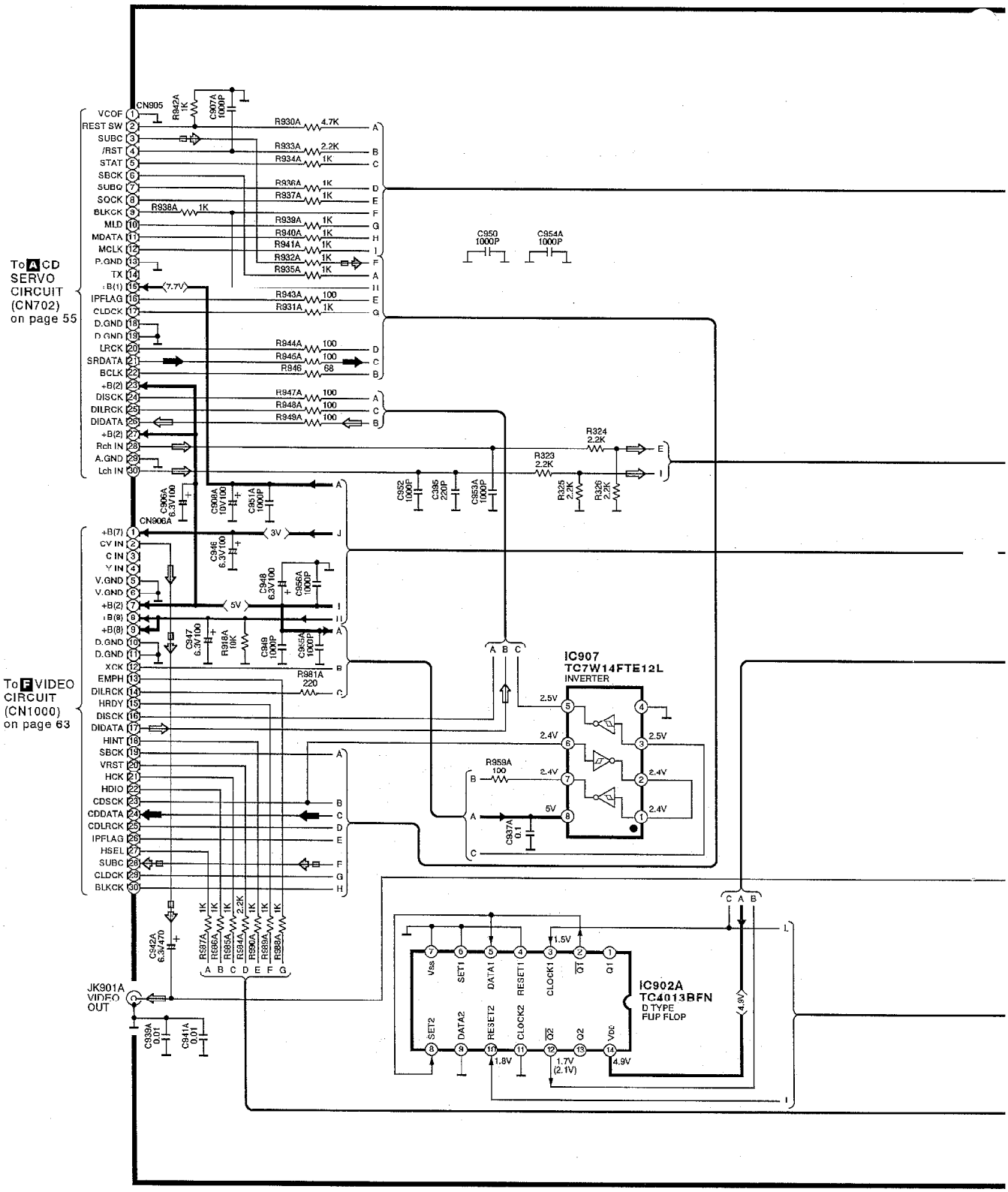
: Positive voltage line
: Negative voltage line
: MIC signal line
: CD-DA/CD-G/V-CD (AUDIO) signal line



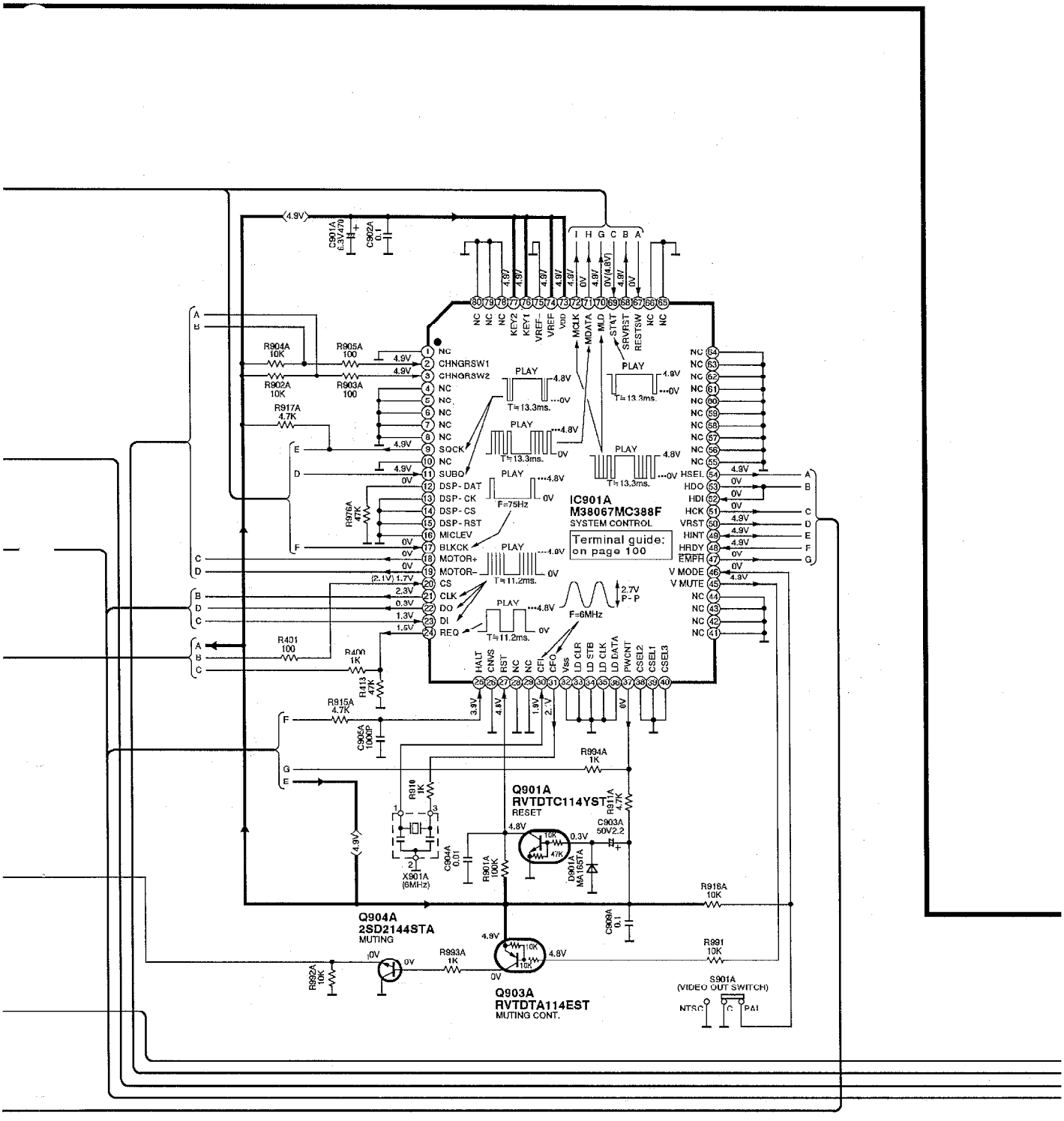
I FL CIRCUIT(P.C.Board:on page 86)



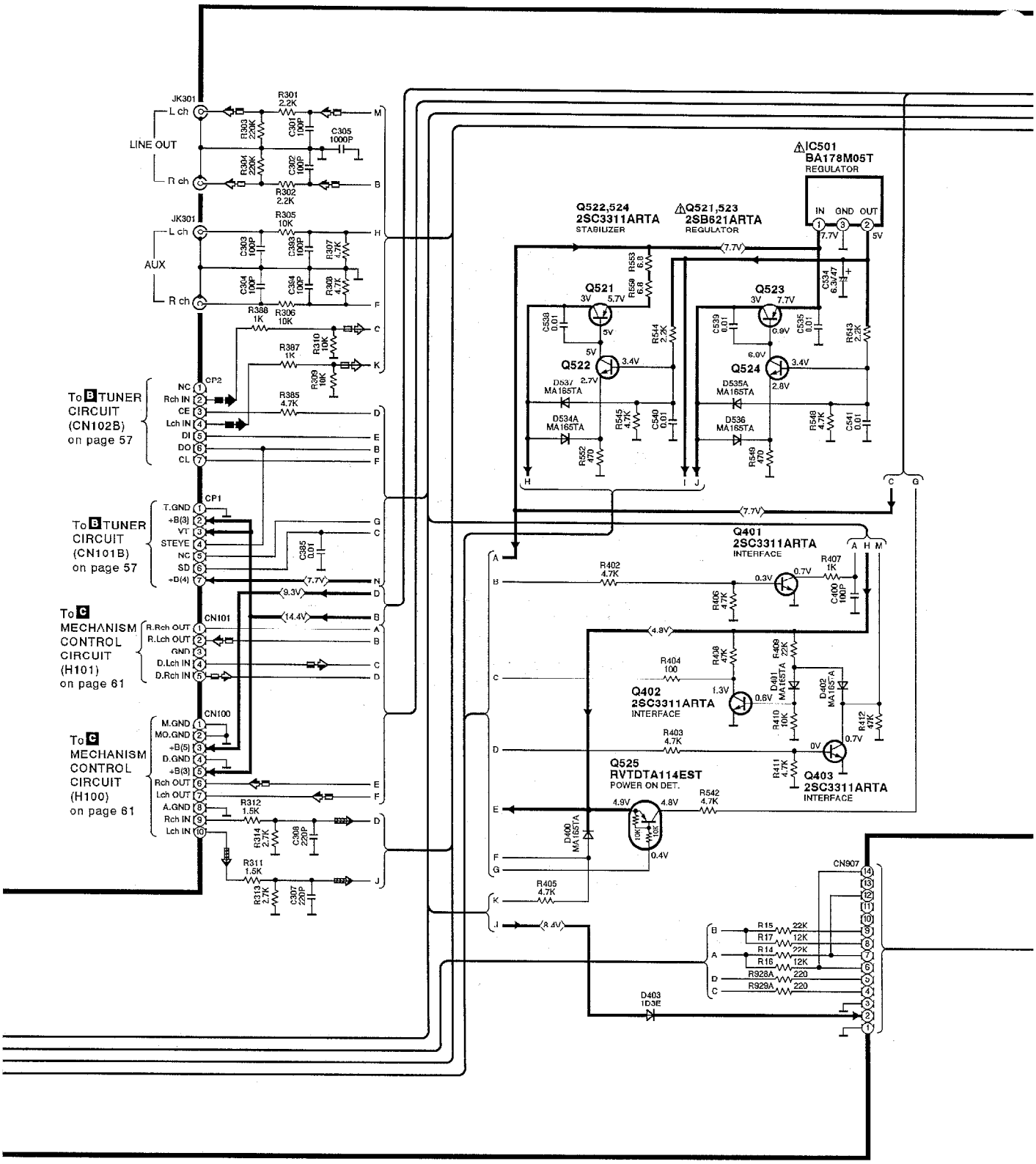
J MAIN CIRCUIT (P.C.Board:on page 88)



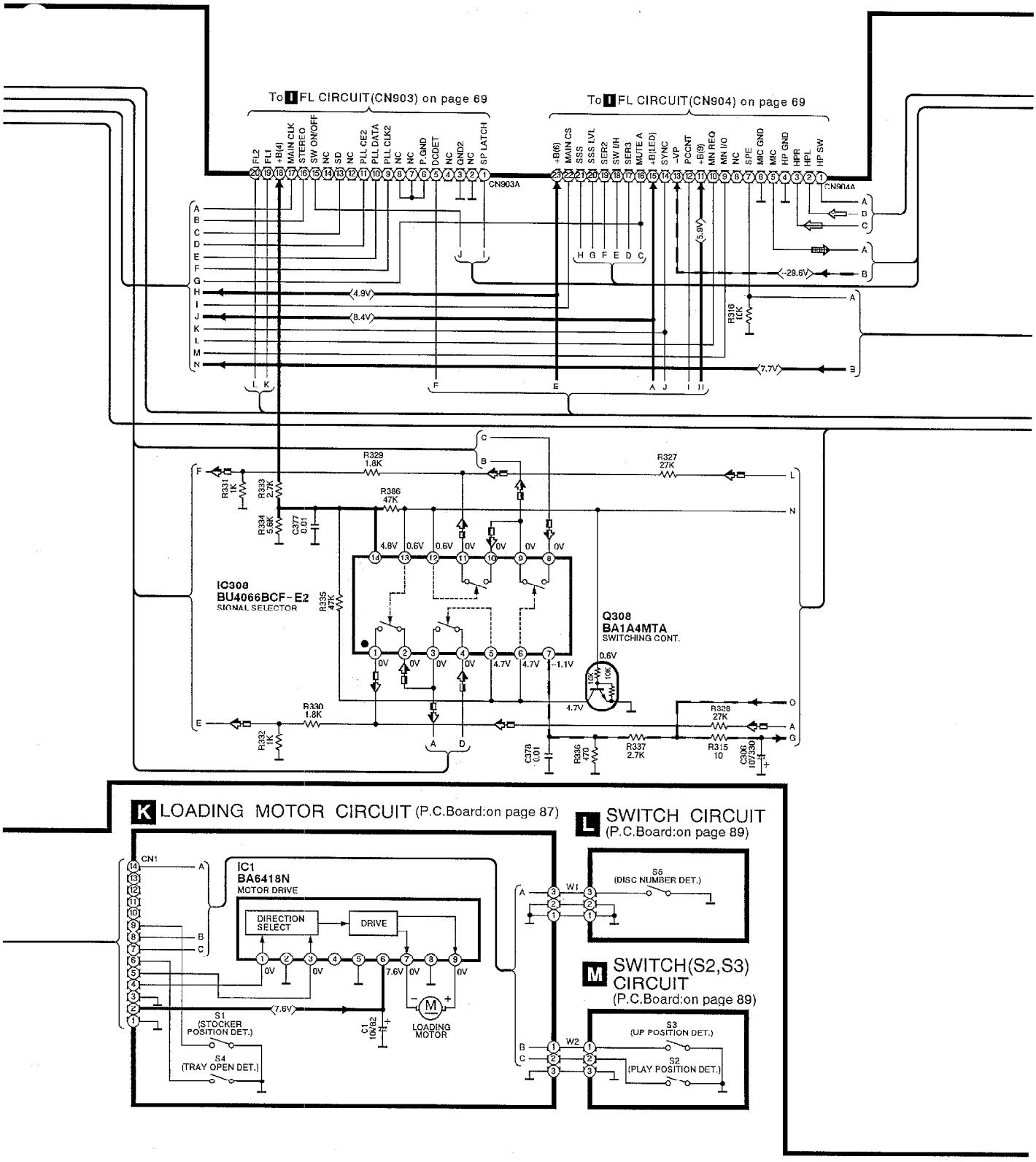
: Positive voltage line
: CD-G (VIDEO) signal line
: CD-DA/CD-G/V-CD (AUDIO) signal line
: V-CD (VIDEO) signal line
: CD-DA/CD-G (AUDIO)/V-CD (AUDIO&VIDEO) signal line



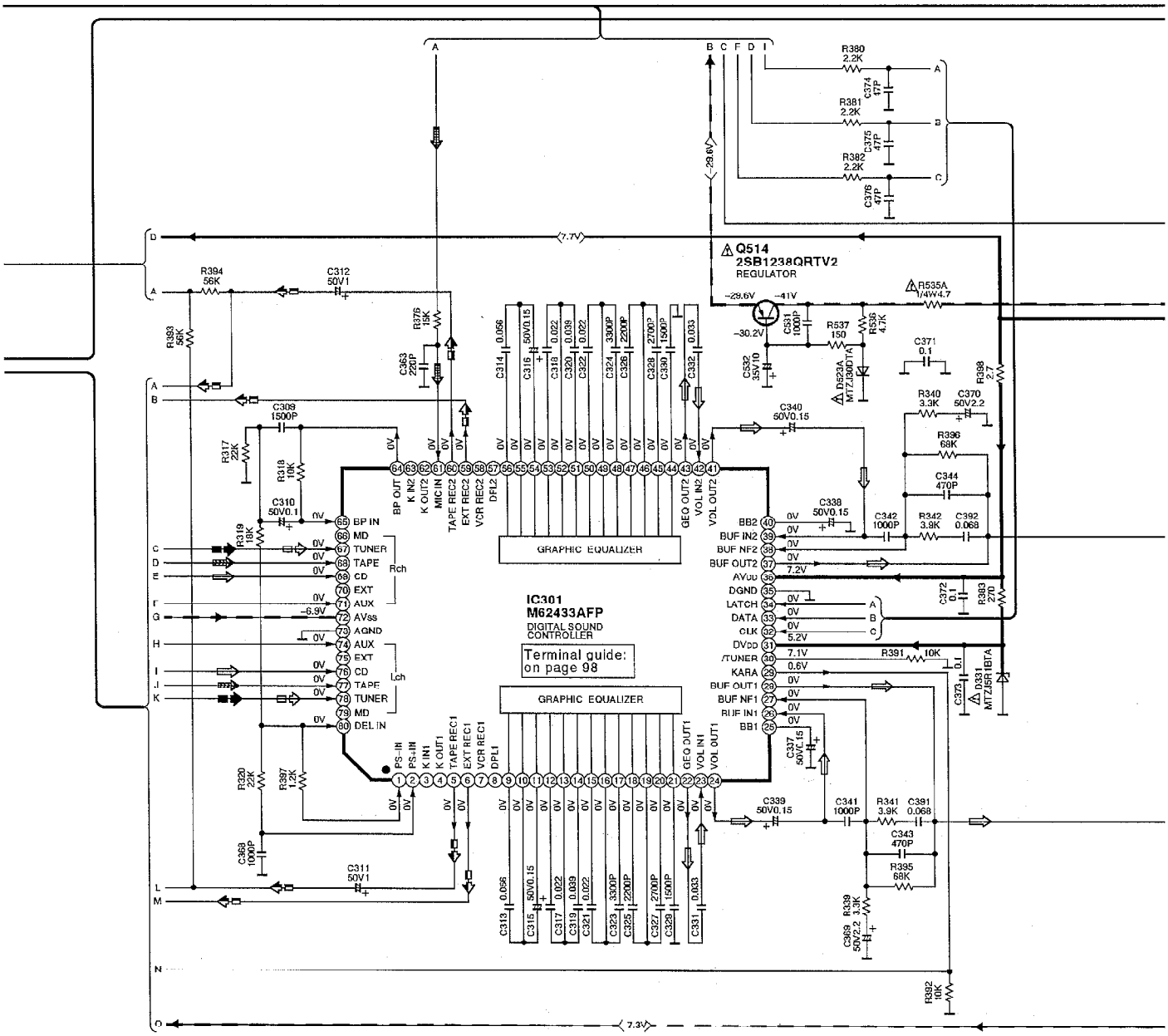
J MAIN CIRCUIT (P.C.Board:on page 88)



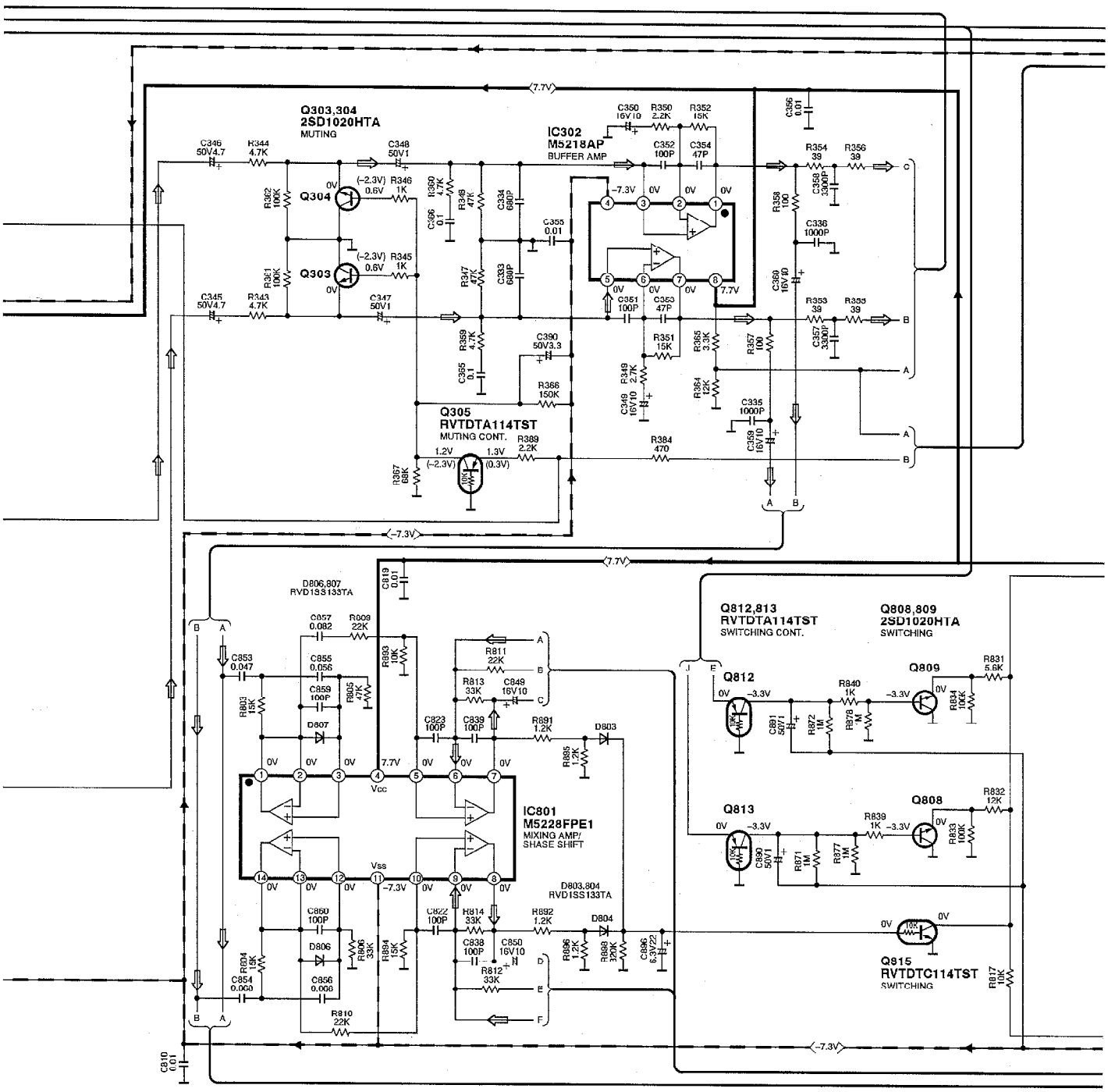
: Positive voltage line
: AM signal line
: Record signal line
: Playback signal line
: FM signal line
: MIC signal line
: Negative voltage line
: CD-DA/CD-G/V-CD (AUDIO) signal line



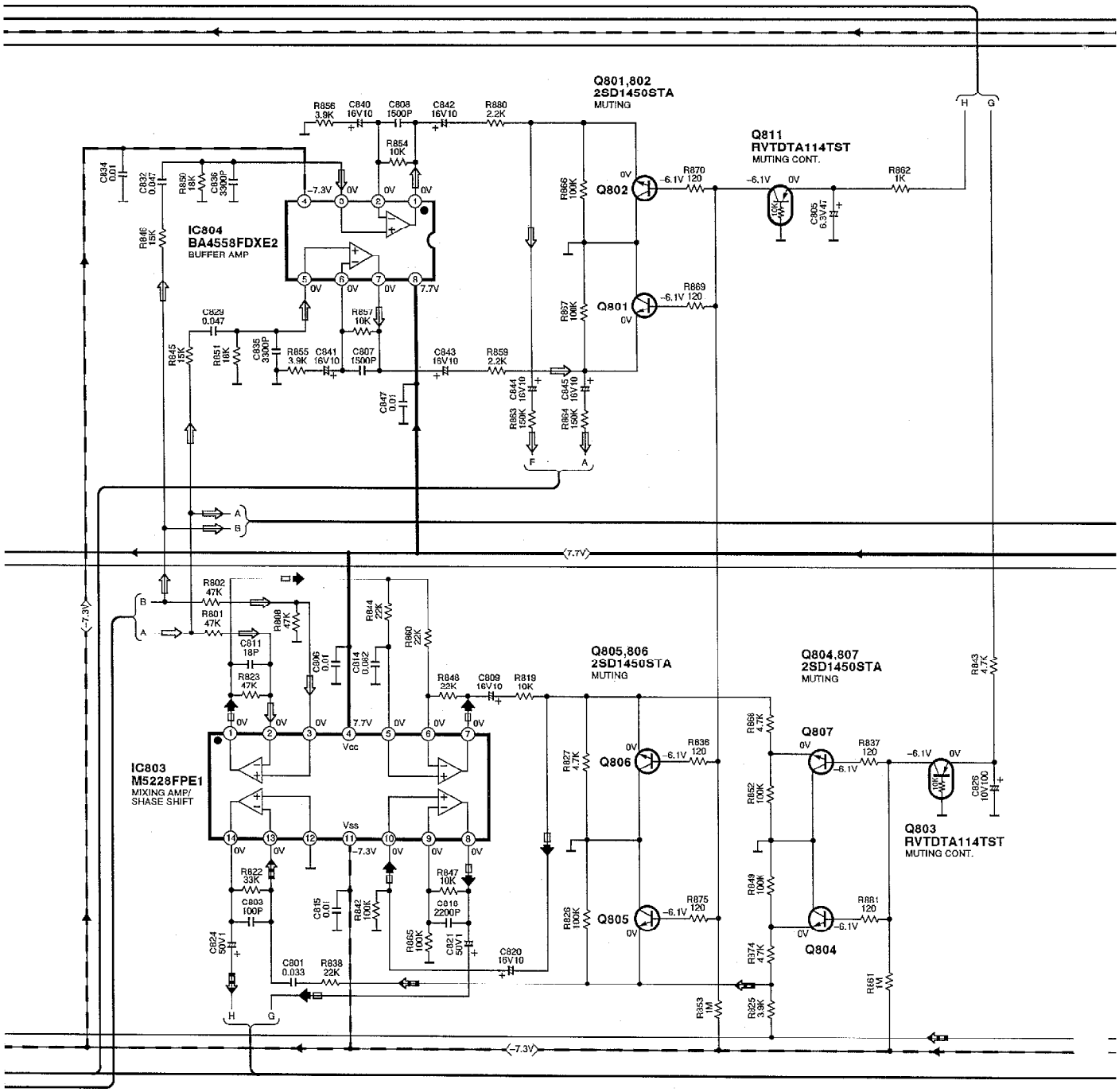
J MAIN CIRCUIT (P.C.Board:on page 88)



: Positive voltage line
: AM signal line
: Record signal line
: Playback signal line
: FM signal line
: MIC signal line
: Negative voltage line
: CD-DA/CD-G/V-CD (AUDIO) signal line

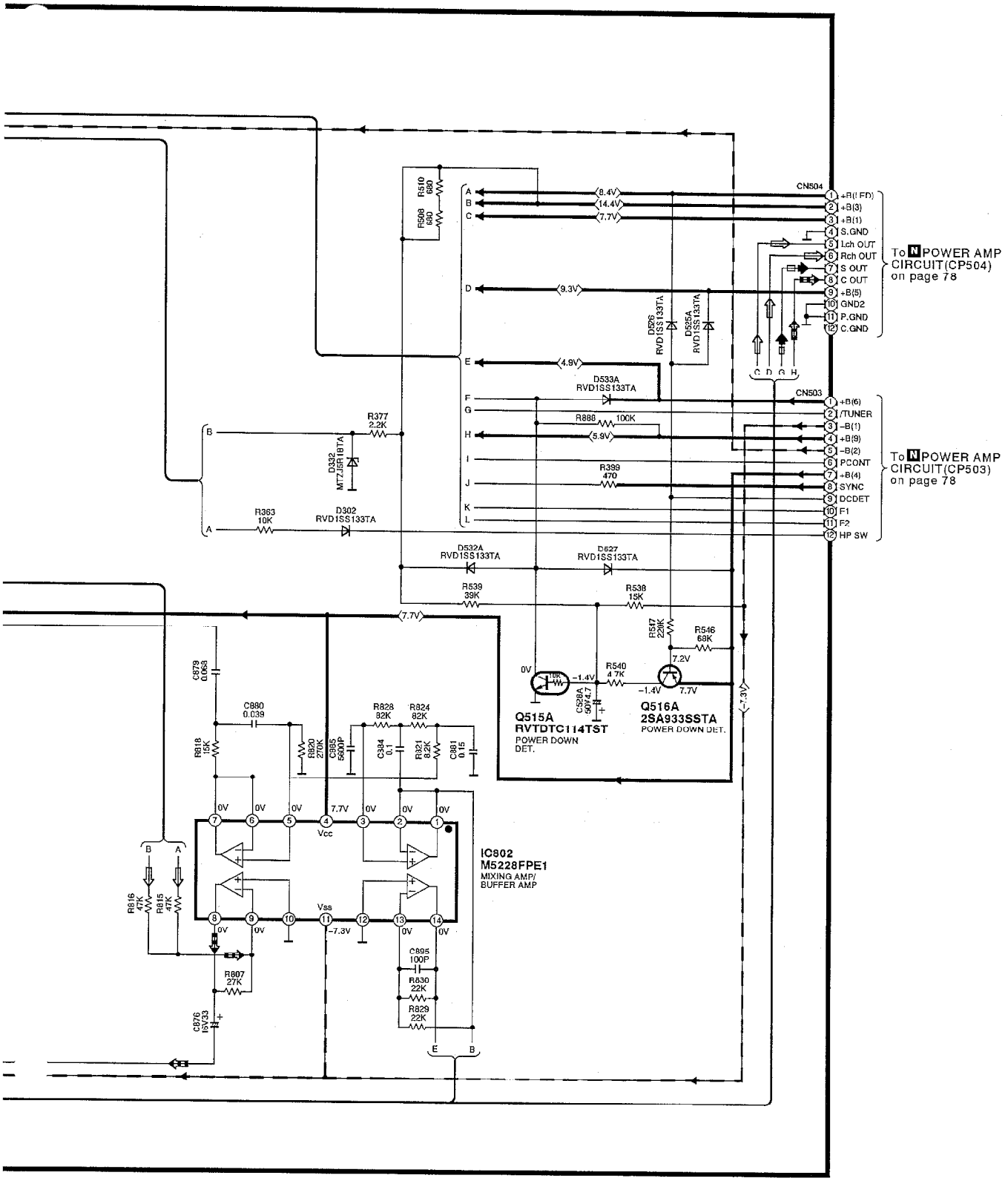


J MAIN CIRCUIT (P.C.Board:on page 88)

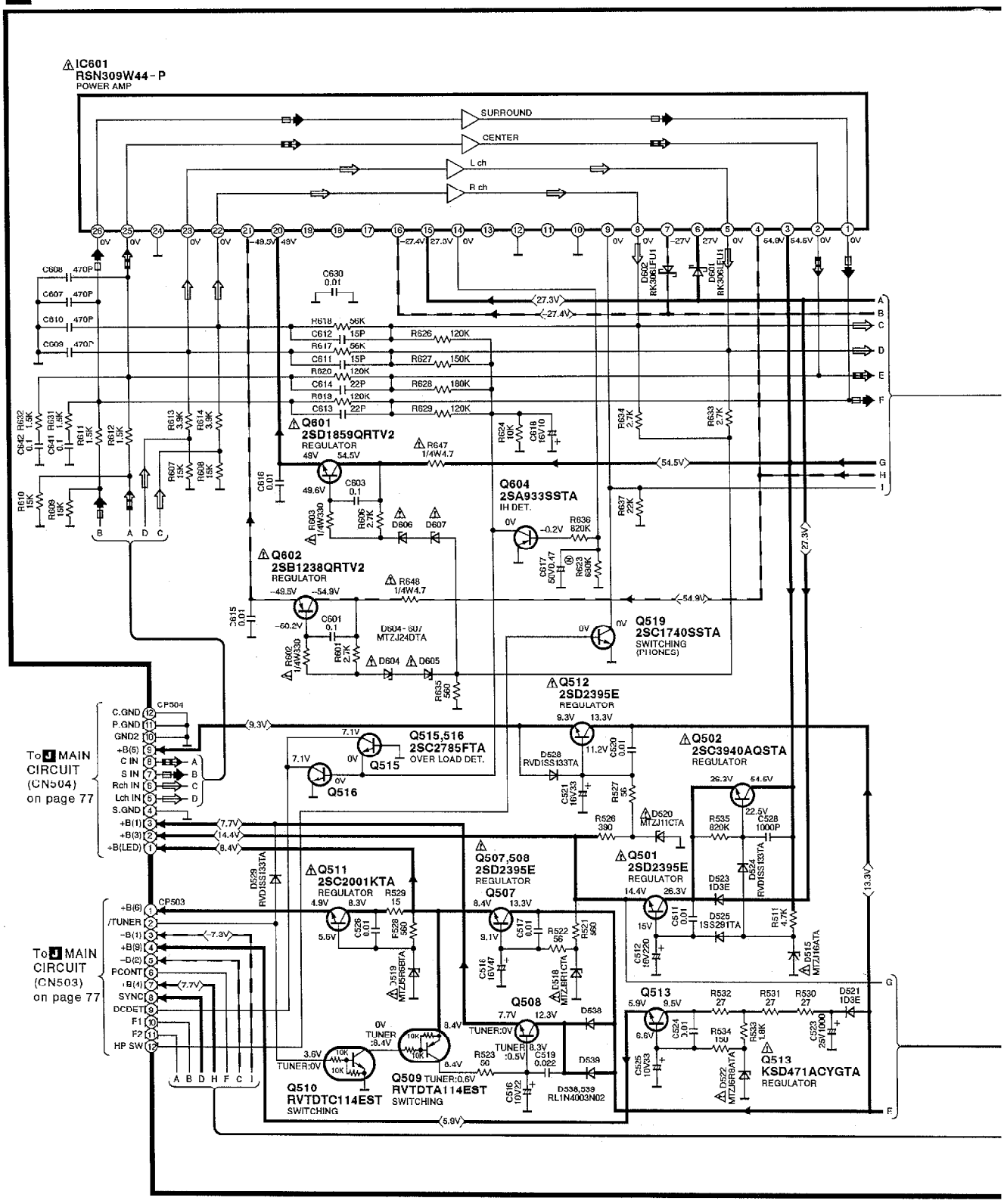


: Positive voltage line : Negative voltage line : CENTER SP signal line

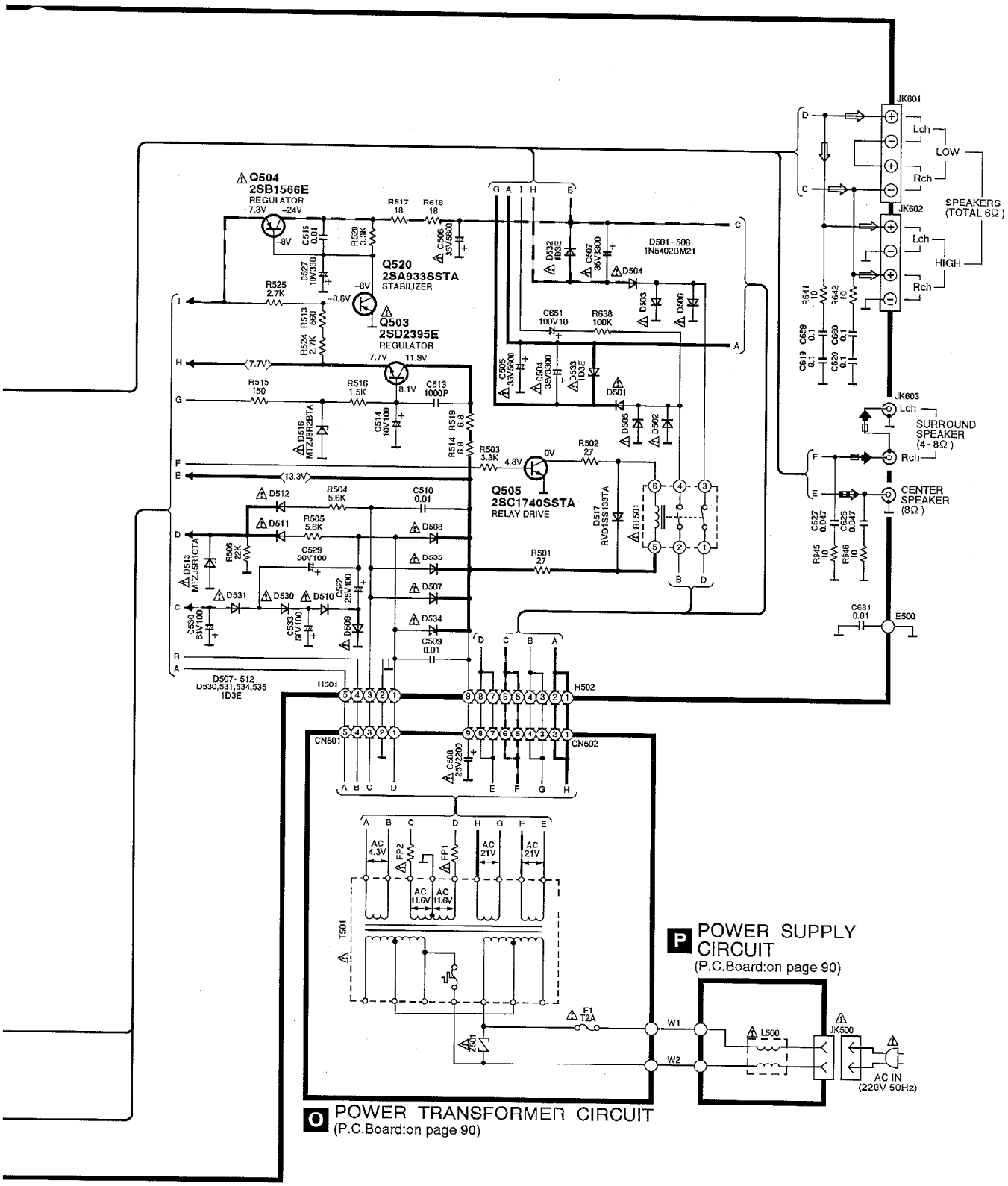
: SURROUND SP signal line : CD-DA/CD-G/V-CD (AUDIO) signal line



N POWER AMP CIRCUIT (P.C.Board:on page 85)

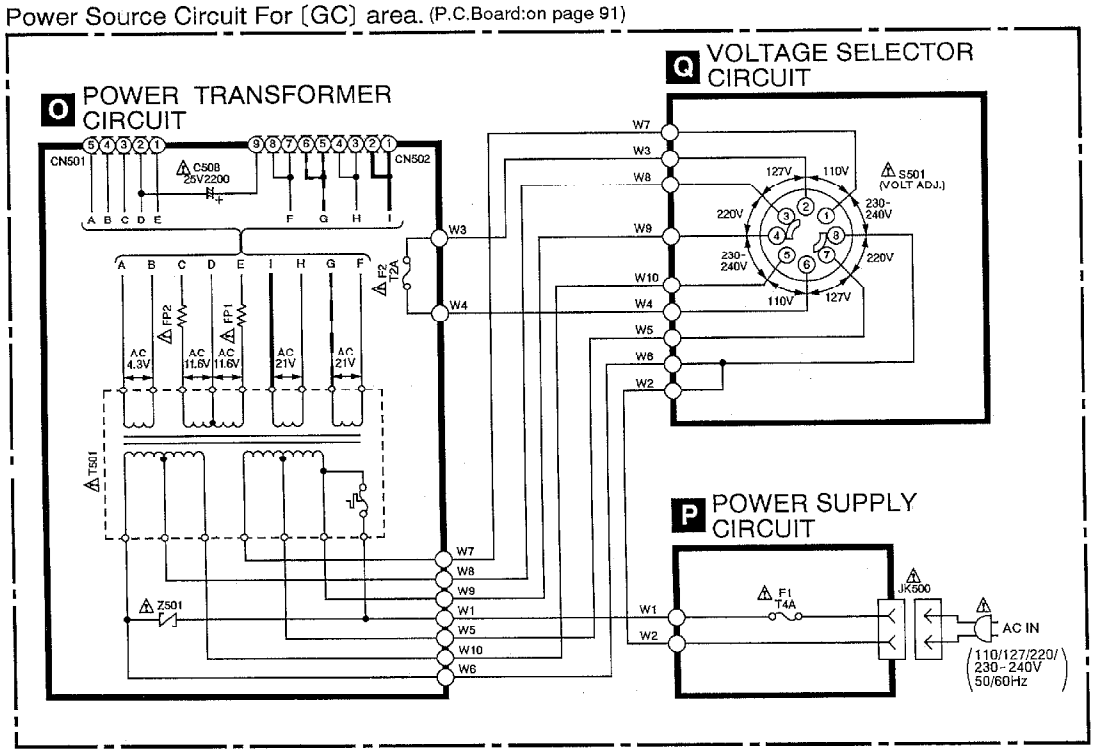


: Positive voltage line : Negative voltage line : CENTER SP signal line
: SURROUND SP signal line : CD-DA/CD-G/V-CD (AUDIO) signal line



: Positive voltage line : Negative voltage line

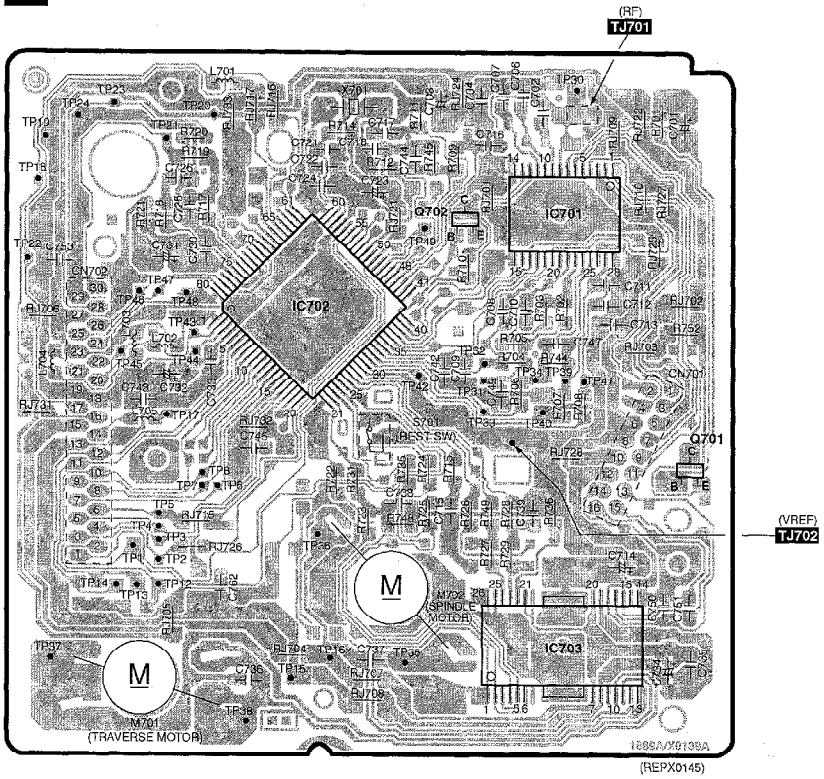
Power Source Circuit For [GC] area. (P.C.Board:on page 91)



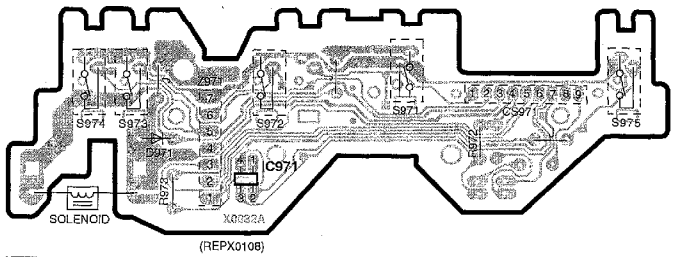
■ Printed Circuit Board Diagram

This circuit board diagram may be modified at any time with the development of new technology.

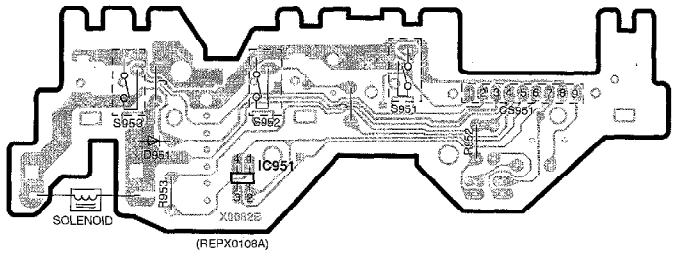
A CD SERVO P.C.B.



D MECHANISM (DECK2) P.C.B.

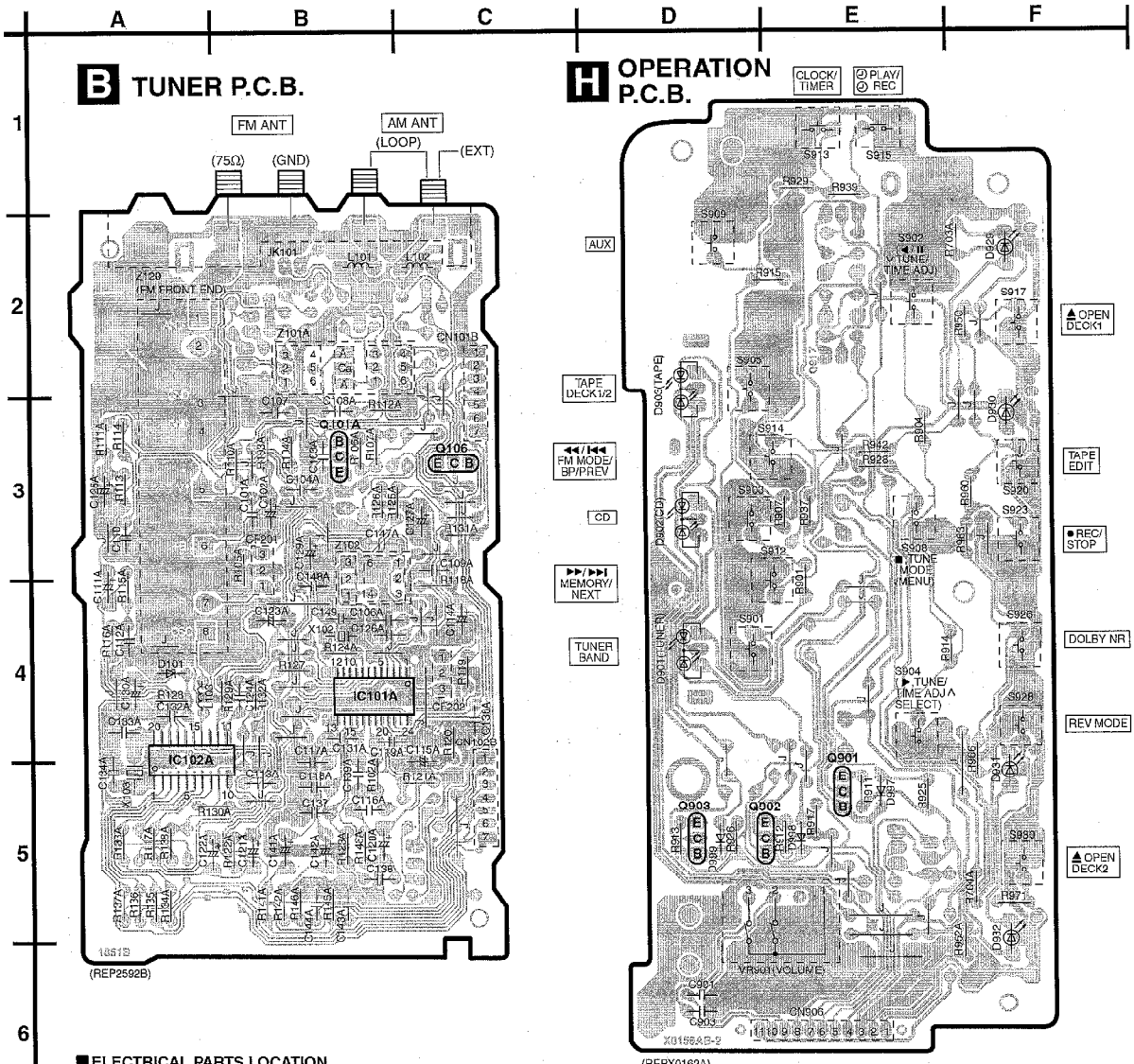


E MECHANISM (DECK1) P.C.B.



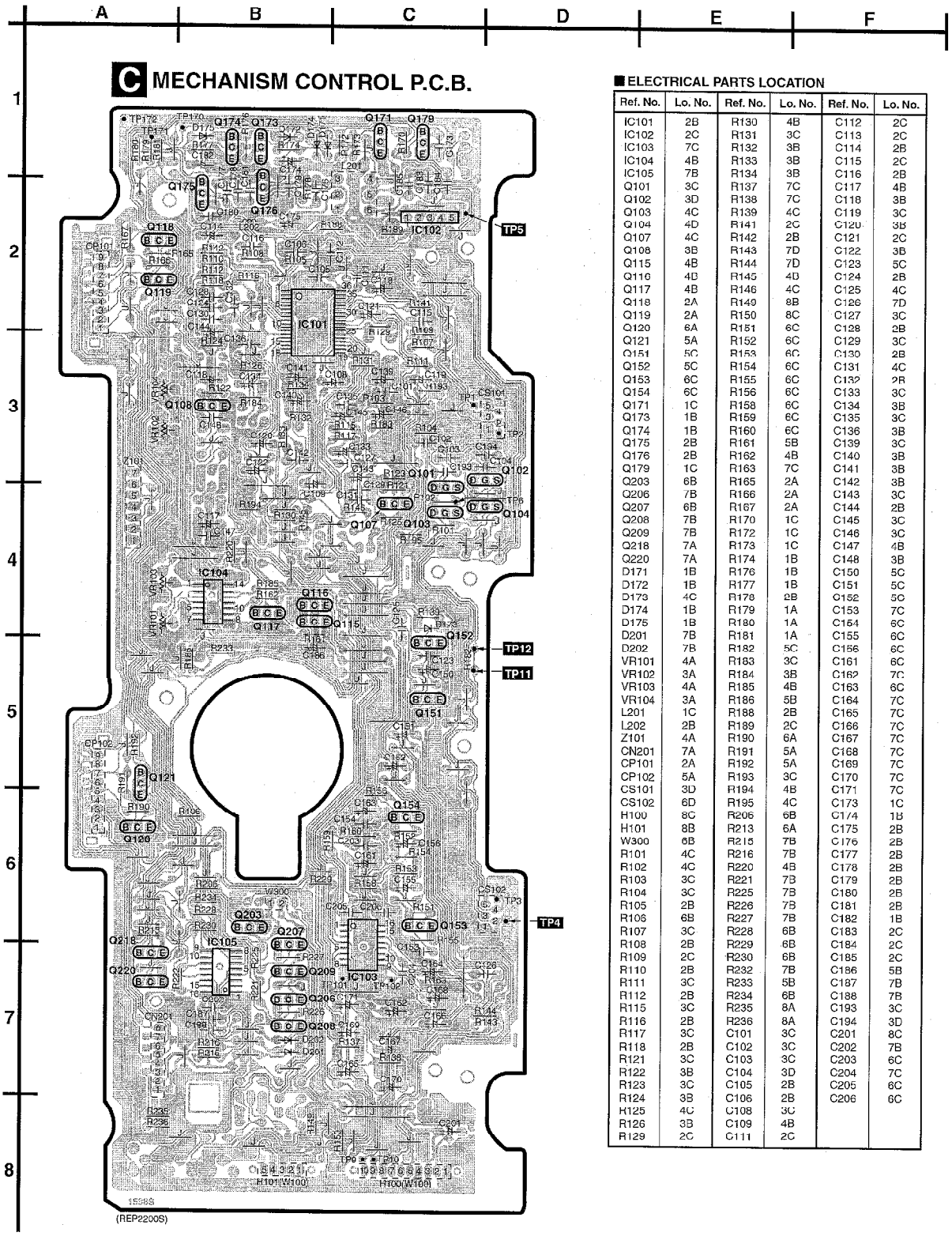
■ ELECTRICAL PARTS LOCATION

Ref. No.	Lo. No.	Ref. No.	Lo. No.
A CD SERVO P.C.B.			
IC701	2D	RJ709	2D
IC702	3B	RJ710	2D
IC703	4D	RJ715	4B
Q701	3D	RJ716	2B
Q702	2C	RJ717	2B
L701	1B	RJ721	2C
L702	3B	RJ722	2D
L703	3A	RJ724	2C
L704	3A	RJ725	2D
L705	3A	RJ726	4B
X701	2C	RJ727	2D
S701	3C	RJ728	3D
CN701	3D	RJ731	3A
CN702	2A	RJ732	3B
M701	5A	RJ733	2B
M702	4C	C701	2D
R701	2D	C702	2D
R702	3D	C703	2C
R703	3C	C704	2C
R704	3C	C706	1C
R705	3C	C707	1C
R706	3C	C708	3C
R707	3D	C709	3C
R708	3D	C710	3C
R709	2C	C711	2D
R710	2C	C712	3D
R711	2C	C713	3D
R712	2C	C714	4D
R714	2B	C715	4C
R715	3C	C716	2C
R717	2B	C717	2C
R718	2B	C718	2C
R719	2B	C721	2B
R720	2B	C722	2B
R721	2A	C723	2C
R722	3B	C724	2B
R723	4C	C725	2B
R724	3C	C726	2B
R725	4C	C730	2B
R726	4C	C731	2D
R727	4C	C732	3B
R728	4C	C733	3B
R729	4C	C734	4D
R731	3C	C735	4D
R735	3C	C736	5B
R736	4D	C737	4C
R744	3D	C738	4C
R745	2C	C739	4C
R748	4C	C742	3C
R749	4C	C743	3A
R752	3D	C744	2C
RJ701	2C	C745	3B
RJ702	3D	C747	3D
RJ703	3D	C749	3C
RJ704	4B	C750	4D
RJ705	4B	C751	4D
RJ706	3A	C753	2A
RJ707	5C	C762	4B
RJ708	5C		
D MECHANISM(DECK2) P.C.B.			
IC971	6B	S974	6B
D971	6B	S975	6D
Z971	6B	CS971	6D
S971	6C	R972	6D
S972	6B	R973	6B
S973	6B		
E MECHANISM(DECK1) P.C.B.			
IC951	8B	S953	8B
D951	8B	CS951	8D
S952	8B	R952	8C
S951	8C	R953	8B



■ELECTRICAL PARTS LOCATION

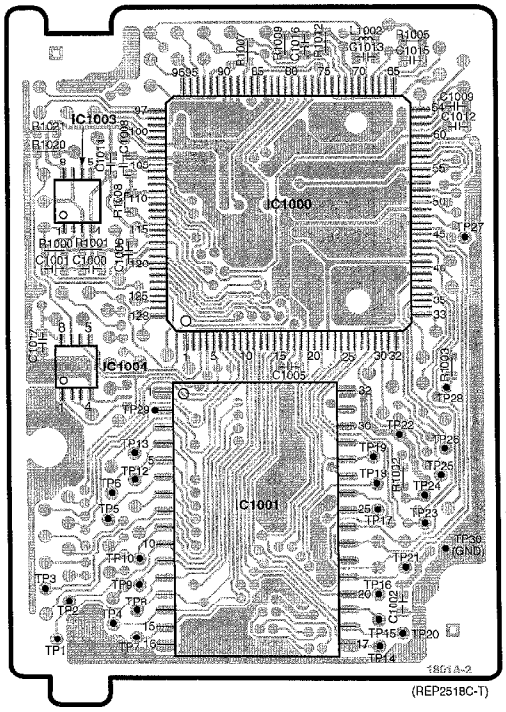
Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.
B TUNER P.C.B.															
IC101A	4B	X102	4B	R112A	3B	R125A	3B	R138A	5A	C109A	3C	C122A	5A	C137	5B
IC102A	4A	X103	5A	R113	3A	R126A	3B	R141A	5B	C110	3A	C123A	4B	C138	5B
Q101A	3B	CN101B	2C	R114	3A	R127	4B	R142A	5B	C111A	4A	C124A	4B	C139A	5B
Q106	3C	CN102B	4C	R115A	4A	R128	4A	R143A	5B	C112A	4A	C125A	3A	C141A	5B
D101	4A	JK101	2B	R116A	4A	R129A	4B	R145A	5B	C113A	5B	C126A	4B	C142A	5B
L101	2B	R102A	5B	R117A	5A	R130A	5A	R146A	5B	C114A	4C	C127A	3C	C143A	5B
L102	2C	R103A	3B	R118A	4C	R131A	3C	C101A	3B	C115A	4C	C129A	3B	C144A	5B
L103	4A	R104A	3B	R119	4C	R132A	4B	C102A	3B	C116A	5B	C130A	4A	C147A	3B
Z101A	2B	R105A	3B	R120	4C	R133A	5A	C103A	3B	C117A	4B	C131A	4B	C148A	4B
Z102	3B	R106A	3B	R121A	5C	R134A	5A	C104A	3B	C118A	5B	C132A	4A	C149	4B
Z120	2A	R107A	3D	R122A	5D	R135	5A	C106A	4B	C119A	4B	C133A	4A		
CF201	3B	R110A	3B	R123A	5B	R136	5A	C107	3B	C120A	5B	C134A	5A		
CF202	4C	R111A	3A	R124A	4B	R137A	5A	C108A	3B	C121A	5B	C136A	4C		
H OPERATION P.C.B.															
Q901	5E	D931	5F	S903	3D	S915	1E	R703A	2F	R914	4E	R939	1E	C901	6D
Q902	5D	D932	5F	S904	4E	S917	2F	R704A	5F	R915	2D	R942	3E	C903	6D
Q903	5D	D997	5E	S905	2D	S920	3F	R901	3E	R917	5E	R950	2F		
D901	4D	D998	5E	S908	3E	S923	3F	R904	3E	R925	5E	R952A	5F		
D902	3D	D999	5D	S909	2D	S926	4F	R907	3E	R926	5D	R960	3F		
D903	2D	VR901	6E	S912	4E	S928	4F	R911	5E	R928	3E	R963	3F		
D929	2F	S901	4D	S913	1E	S930	5F	R912	5E	R929	1E	R966	4F		
D930	3F	S902	2E	S914	3E	CN906	6E	R913	5D	R937	3E	R971	5F		



■ ELECTRICAL PARTS LOCATION

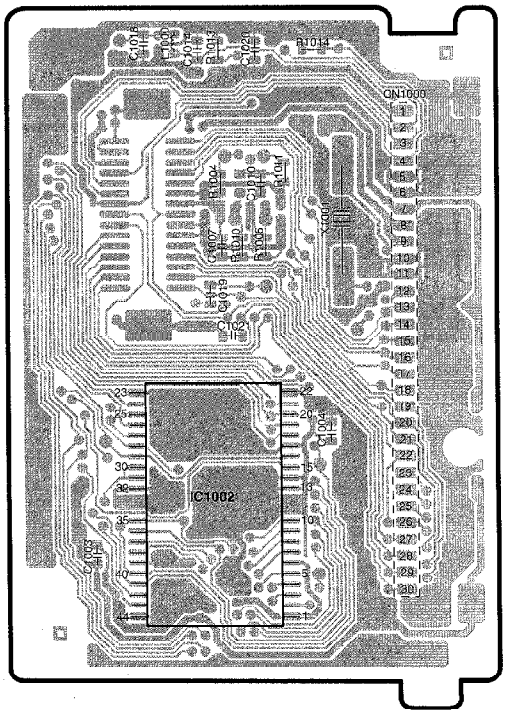
Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.
IC101	2B	R130	4B	C112	2C
IC102	2C	R131	3C	C113	2C
IC103	7C	R132	3B	C114	2B
IC104	4B	R133	3B	C115	2C
IC105	7B	R134	3B	C116	2B
Q101	3C	R137	7C	C117	4B
Q102	3D	R138	7C	C118	3B
Q103	4C	R139	4C	C119	3C
Q104	4D	R141	2C	C120	3B
Q107	4C	R142	2B	C121	2C
Q108	3B	R143	7D	C122	3B
Q115	4B	R144	7D	C123	5C
Q116	4B	R145	4D	C124	2B
Q117	4B	R146	4C	C125	4C
Q118	2A	R149	8B	C126	7D
Q119	2A	R150	8C	C127	3C
Q120	6A	R151	6C	C128	2B
Q121	5A	R152	6C	C129	3C
Q151	5C	R153	6C	C130	2B
Q152	5C	R154	6C	C131	4C
Q153	6C	R155	6C	C132	2B
Q154	6C	R156	6C	C133	3C
Q171	1C	R158	6C	C134	3B
Q173	1B	R159	6C	C135	3C
Q174	1B	R160	6C	C136	3B
Q175	2B	R161	5B	C139	3C
Q176	2B	R162	4B	C140	3B
Q179	1C	R163	7C	C141	3B
Q203	6B	R165	2A	C142	3B
Q206	7B	R166	2A	C143	3C
Q207	6B	R167	2A	C144	2B
Q208	7B	R170	1C	C145	3C
Q209	7B	R172	1C	C146	3C
Q218	7A	R173	1C	C147	4B
Q220	7A	R174	1B	C148	3B
D171	1B	R176	1B	C150	5C
D172	1B	R177	1B	C151	5C
D173	4C	R178	2B	C152	5C
D174	1B	R179	1A	C153	7C
D175	1B	R180	1A	C154	6C
D201	7B	R181	1A	C155	6C
D202	7B	R182	5C	C156	6C
VR101	4A	R183	3C	C161	6C
VR102	3A	R184	3B	C162	7C
VR103	4A	R185	4B	C163	6C
VR104	3A	R186	5B	C164	7C
L201	1C	R188	2B	C165	7C
L202	2B	R189	2C	C166	7C
Z101	4A	R190	6A	C167	7C
CN201	7A	R191	5A	C168	7C
CP101	2A	R192	5A	C169	7C
CP102	5A	R193	3C	C170	7C
CS101	3D	R194	4B	C171	7C
CS102	6D	R195	4C	C173	1C
H100	8C	R206	6B	C174	1B
H101	8B	R213	6A	C175	2B
W300	6B	R215	7B	C176	2B
R101	4C	R216	7B	C177	2B
R102	4C	R220	4B	C178	2B
R103	3C	R221	7B	C179	2B
R104	3C	R225	7B	C180	2B
R105	2B	R226	7B	C181	2B
R106	6B	R227	7B	C182	1B
R107	3C	R228	6B	C183	2C
R108	2B	R229	6B	C184	2C
R109	2C	R230	6B	C185	2C
R110	2B	R232	7B	C186	5B
R111	3C	R233	5B	C187	7B
R112	2B	R234	6B	C188	7B
R115	3C	R235	8A	C193	3C
R116	2B	R236	8A	C194	3D
R117	3C	C101	3C	C201	8C
R118	2B	C102	3C	C202	7B
R121	3C	C103	3C	C203	6C
R122	3B	C104	3D	C204	7C
R123	3C	C105	2B	C205	6C
R124	3B	C106	2B	C206	6C
R125	4C	C108	3C		
R126	3B	C109	4B		
R129	2C	C111	2C		

F VIDEO P.C.B.(SIDE : A)

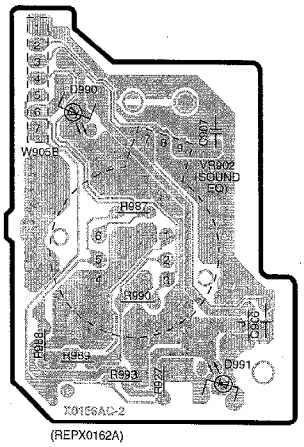


(REP2518C-T)

F VIDEO P.C.B.(SIDE : B)



G JOG DIAL P.C.B.

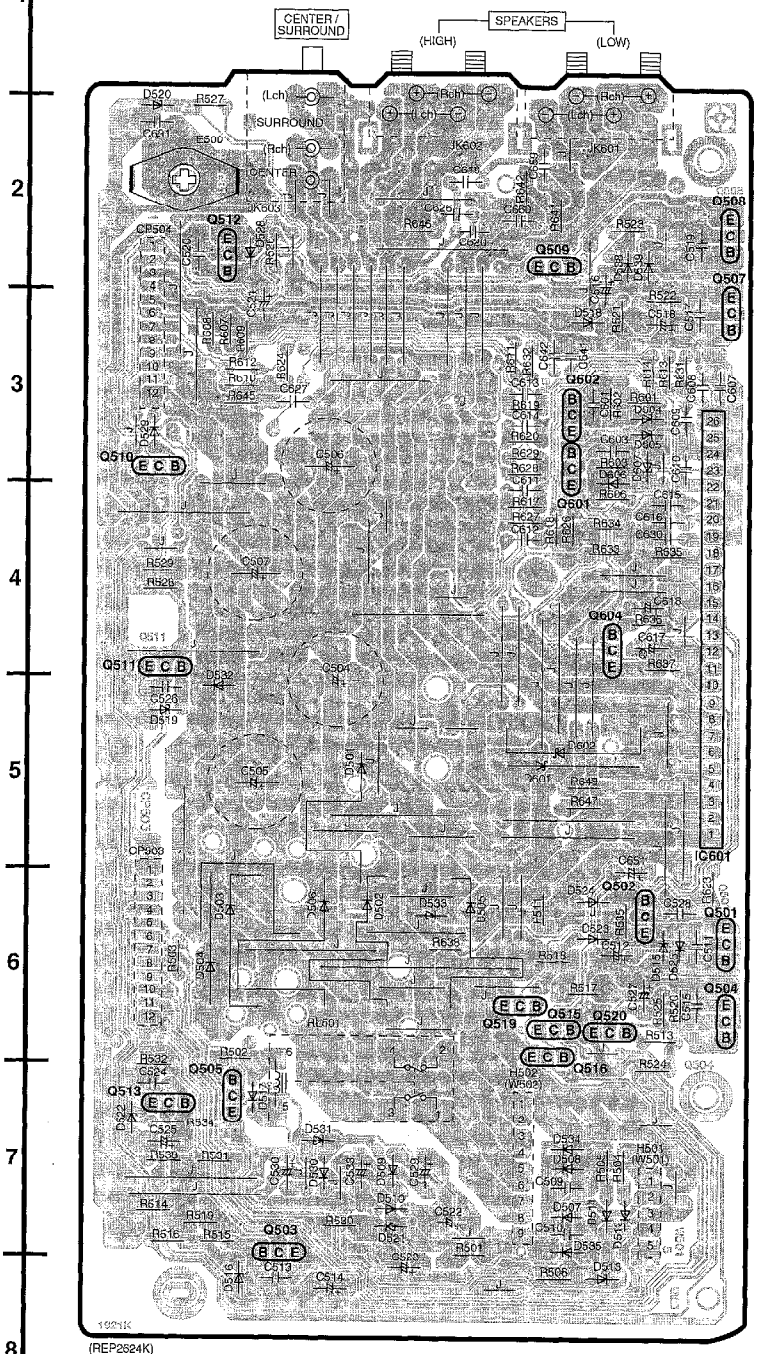


(REPX0162A)

■ELECTRICAL PARTS LOCATION

Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.
F VIDEO P.C.B.							
IC1000	2B	R1003	3C	R1020	2A	C1010	2E
IC1001	4B	R1004	2E	R1021	2A	C1011	2A
IC1002	4E	R1005	1C	C1000	2A	C1012	2C
IC1003	2A	R1006	2E	C1001	2A	C1013	1C
IC1004	3A	R1007	1B	C1002	4C	C1014	1E
L1000	1E	R1008	1A	C1003	4D	C1015	1C
L1002	1C	R1009	1B	C1004	3F	C1016	1B
X1001	2F	R1010	2E	C1005	3B	C1017	3A
CN1000	2F	R1011	2E	C1006	2A	C1018	1E
R1000	2A	R1012	1B	C1007	2E	C1019	3E
R1001	2A	R1013	1E	C1008	2A	C1020	1E
R1002	4C	R1014	1E	C1009	2C	C1021	3E
G JOG DIAL P.C.B.							
D990	6A	W905B	6A	R988	7A	R993	8B
D991	8B	R927	8B	R989	8A	C906	7B
VR902	7B	R987	7B	R990	7B	C907	6B

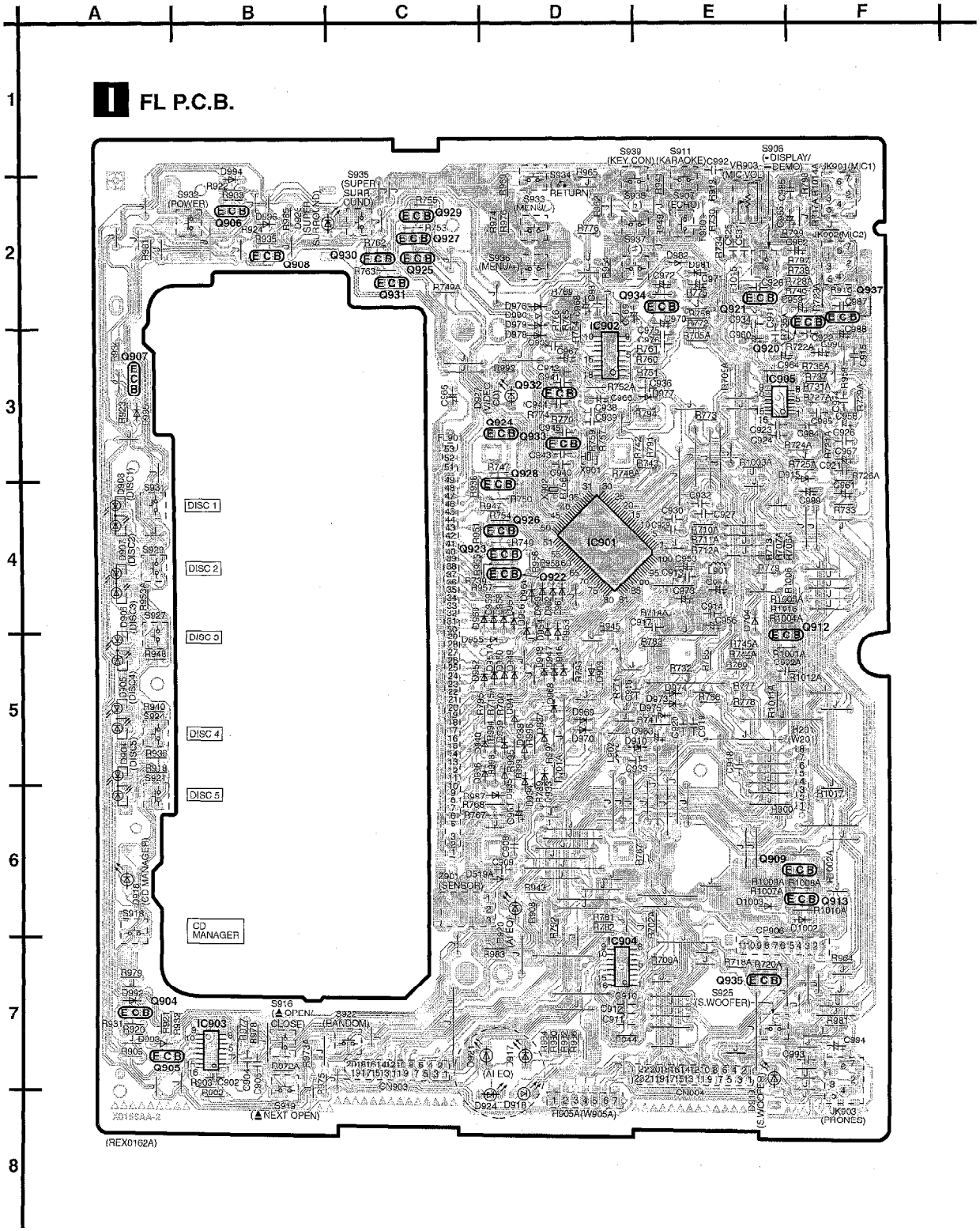
N POWER AMP P.C.B.



■ELECTRICAL PARTS LOCATION

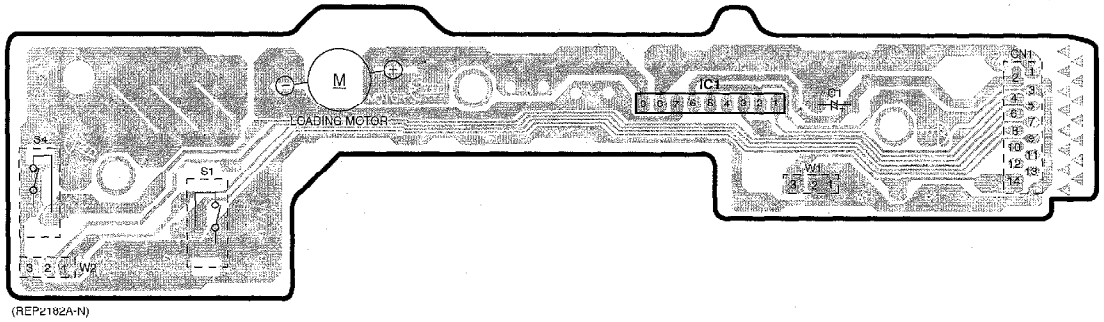
Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.
IC601	5D	H501	7D	R636	4D
Q501	6D	H502	7C	R637	4D
Q502	6D	JK601	2C	R638	6C
Q503	7B	JK602	2C	R641	2C
Q504	6D	JK603	2B	R642	2C
Q505	7B	E500	2A	R645	3B
Q507	3D	R501	7C	R646	2C
Q508	2D	R502	6B	R647	5C
Q509	2C	R503	6A	R648	5C
Q510	3A	R504	7D	C504	5B
Q511	4A	R505	7C	C505	5B
Q512	2B	R506	8C	C506	3B
Q513	7A	R511	6C	C507	4B
Q515	6C	R513	6D	C509	7C
Q516	6C	R514	7A	C510	7C
Q519	6C	R515	7A	C511	6D
Q520	6C	R516	7A	C512	6D
Q601	3C	R517	6C	C513	8B
Q602	3C	R518	6C	C514	8B
Q604	4D	R519	7A	C515	6D
D501	5B	R520	6D	C516	2D
D502	6B	R521	3D	C517	3D
D503	6B	R522	3D	C518	3D
D504	6A	R523	2D	C519	2D
D505	6C	R524	7D	C520	2A
D506	6B	R525	6D	C521	3B
D507	7C	R526	2B	C522	7C
D508	7C	R527	2A	C523	8C
D509	7B	R528	4A	C524	7A
D510	7B	R529	4A	C525	7A
D511	7C	R530	7B	C526	5A
D512	7D	R531	7A	C527	6D
D513	8C	R532	7A	C528	6D
D515	6D	R533	7A	C529	7C
D516	8B	R534	7A	C530	7B
D517	7B	R535	6D	C533	7B
D518	3C	R601	3D	C601	3C
D519	5A	R602	3D	C603	3D
D520	2A	R603	3D	C607	3D
D521	7B	R606	4C	C608	3D
D522	7A	R607	3A	C609	3D
D523	6C	R608	3A	C610	3D
D524	6C	R609	3B	C611	4C
D525	6D	R610	3B	C612	4C
D528	2B	R611	3C	C613	3C
D529	3A	R612	3B	C614	3C
D530	7B	R613	3D	C615	4D
D531	7B	R614	3D	C616	4D
D532	5A	R617	4C	C617	4D
D533	6C	R618	4C	C618	4D
D534	7C	R619	3C	C619	2C
D535	7C	R620	3C	C620	2C
D538	2D	R623	6D	C626	2C
D539	2D	R624	3B	C627	3B
D601	5C	R626	4C	C630	4D
D602	5C	R627	4C	C631	2A
D604	3D	R628	3C	C641	3C
D605	3D	R629	3C	C642	3C
D606	3D	R631	3D	C651	6D
D607	3D	R632	3C	C659	2C
RL501	6B	R633	4C	C660	2C
CP503	6A	R634	4C		
CP504	2A	R635	4D		

I FL P.C.B.


A
B
C
D
E
F
1
2
3
4
5
6
7
8
DISC 1
DISC 2
DISC 3
DISC 4
DISC 5
CD MANAGER
IC901
IC902
IC903
IC904
IC905
Q907
Q908
Q909
Q912
Q913
Q920
Q921
Q922
Q923
Q924
Q925
Q926
Q927
Q928
Q929
Q930
Q931
Q932
Q933
Q934
Q935
Q937
Q904
Q905
Q906
S905 (DISPLAY/ DEMO)
S906 (KEY CON)
S907 (KARAOKE)
S911 (MIC VOL)
S916 (OPEN/ CLOSE)
S922 (RANDOM)
S925 (S.WOOFER)
S932 (POWER)
S933 (MENU-)
S934 (RETURN)
S935 (SUPER SURR COND)
S936 (MENU+)
S939 (ECHO)
S940 (SUPER BASS)
S941 (A.EQ)
S942 (SENSOR)
S943 (CD MANAGER)
S944 (DISC1)
S945 (DISC2)
S946 (DISC3)
S947 (DISC4)
S948 (DISC5)
S918 (▲NEXT OPEN)
VR903 (MIC VOL)
JK901(MIC1)
JK902(MIC2)
JK903 (PHONES)
CN903
CN904
CN905
(REX0162A)

G H I J K L

K LOADING MOTOR P.C.B.

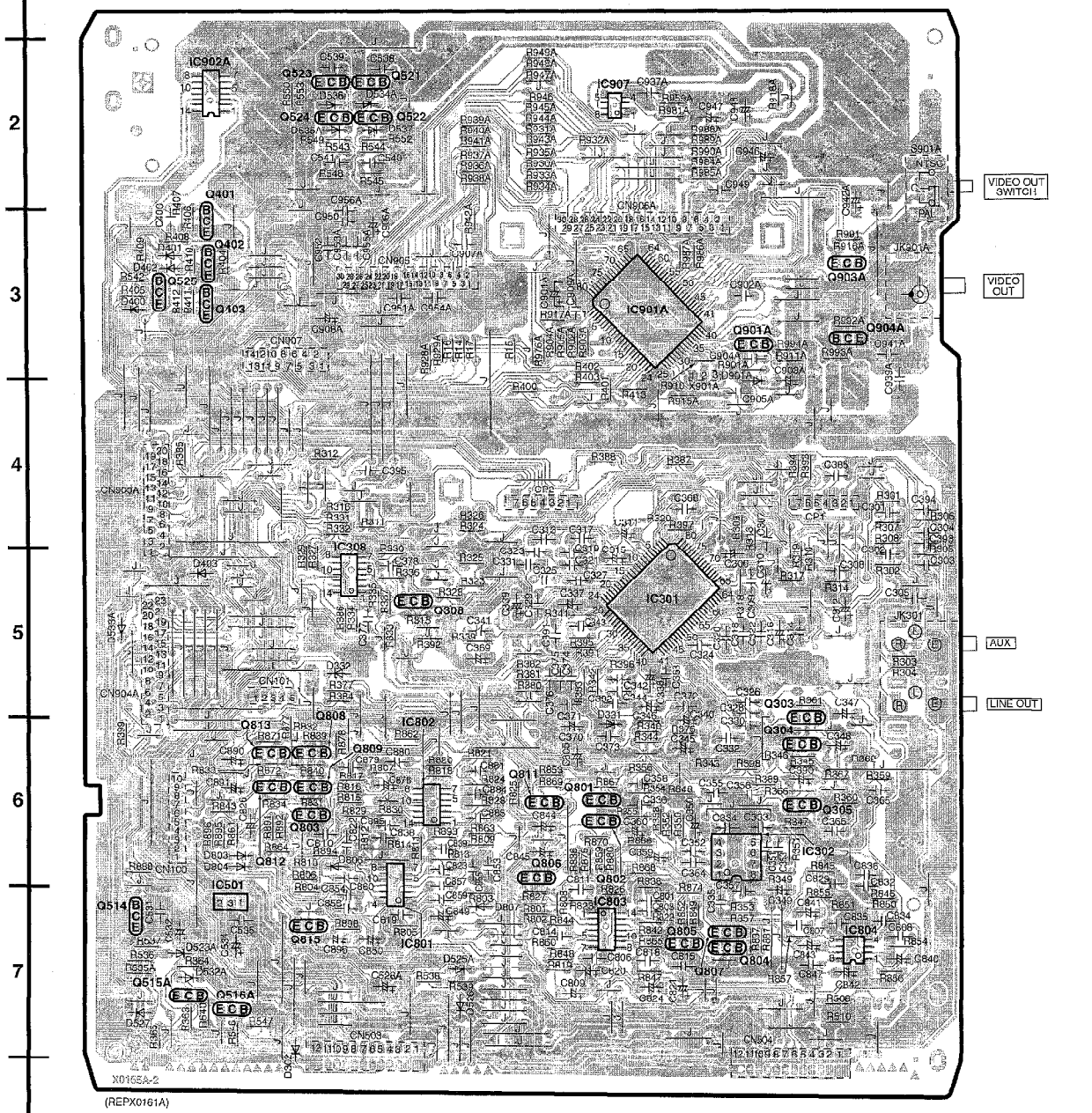


(REP2182A-N)

■ ELECTRICAL PARTS LOCATION

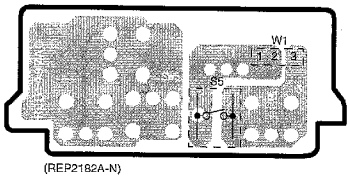
Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.
1 FL P.C.B.															
IC901	4D	D927	3D	D1002	6F	R712A	4E	R762	2C	R931	7A	R998	5D	C935	3D
IC902	3D	D933	5D	D1003	6E	R713	4E	R763	2C	R932	7A	R999	5D	C936	3E
IC903	7B	D934	5D	VR903	2E	R714A	4E	R764	3D	R933	2B	R1001A	5E	C937	2D
IC904	7D	D935	5D	L901	4E	R715A	5D	R765	2D	R934	3A	R1002A	6F	C938	3D
IC905	3E	D936	5D	L902	5D	R717A	2F	R766	2D	R935	2B	R1003A	3E	C939	3D
Q904	7A	D937	5D	Z901	6C	R718A	7E	R767	6D	R936	5A	R1004A	4E	C940	3D
Q905	7A	D938	5D	X901	3D	R720A	7E	R768	6D	R938	4C	R1005A	4E	C941	3D
Q906	2B	D939	5D	X902	4D	R721A	3F	R769	2D	R940	5A	R1006	4F	C942	3D
Q907	3A	D940	5D	FL901	3C	R722A	3E	R770	3D	R941	2E	R1007A	6E	C943	3D
Q908	2B	D941	5D	S906	2E	R723A	2F	R771	5D	R943	6D	R1008A	6F	C944	3D
Q909	6E	D946	5D	S907	2E	R724A	3F	R772	2E	R944	7D	R1009A	6E	C945	3D
Q912	4E	D947	5D	S911	2F	R725A	3F	R773	3F	R945	4D	R1010A	6F	C951	6D
Q913	6F	D948	5D	S916	7B	R726A	3F	R774	3D	R947	4D	R1011A	5E	C953	4E
Q920	2F	D949	5D	S918	6A	R727A	3F	R775	2E	R948	5A	R1012A	5E	C954	4E
Q921	2E	D950	5D	S919	7B	R728A	2F	R776	2D	R949	2E	R1014A	2F	C955	2F
Q922	4D	D951A	5D	S921	6A	R729A	3F	R777	5E	R951	4C	R1015	2E	C956	4E
Q923	4D	D952	5D	S922	7C	R730	2E	R778	5E	R953A	4A	R1016	4F	C957	3F
Q924	3D	D953	4D	S924	5A	R731A	3F	R779	4E	R954	2D	R1017	6F	C958	3F
Q925	2C	D954	4D	S925	7E	R732	5E	R780	5E	R955	4C	C902	7B	C959	2F
Q926	4D	D955	4D	S927	4A	R733	4F	R781	6D	R956	4D	C904	7B	C960	3E
Q927	2C	D956	4D	S929	4A	R734	2E	R782	6D	R957	4C	C905	7B	C961	4F
Q928	4D	D957	4D	S931	4A	R735A	2F	R783	5E	R958	4D	C908	6D	C962	2F
Q929	2C	D958	4D	S932	2B	R736A	3F	R785	5E	R959	3F	C909	6D	C963	5E
Q930	2C	D959	4D	S933	2D	R737	3F	R786	5E	R961	2A	C910	7D	C964	3E
Q931	2C	D960	4D	S934	2D	R738	2F	R787	6E	R962	2D	C911	7D	C965	3C
Q932	3D	D961	4D	S935	2C	R739	4C	R789	5D	R964	7F	C912	7D	C966	3D
Q933	3D	D962	4D	S936	2D	R740	4D	R791	3E	R965	2D	C913	4E	C967	3D
Q934	2E	D963	4D	S937	2E	R741	5E	R792	6D	R969	2D	C914	4E	C968	2D
Q935	7E	D964	4D	S938	2E	R742	3E	R794	3E	R972A	7B	C915	3F	C969	2E
Q937	2F	D968	5D	S939	2E	R743	3E	R795	5D	R973A	7B	C916	5D	C970	2E
D519A	6D	D969	5D	CN903	7C	R744A	5E	R796	5D	R974	2D	C917	4E	C971	2E
D704	4E	D970	5D	CN904	7E	R745A	5E	R797	2F	R975	7B	C918	5E	C972	2E
D904	5A	D973	5E	CP906	6E	R746	2F	R798	2F	R976	2D	C919	5E	C973	4E
D905	5A	D974	5E	H905A	8D	R747	3D	R799	2F	R977	7B	C920	5E	C974	3F
D906	4A	D975	5E	H201	5F	R748A	3D	R900	6E	R978	7B	C921	3F	C975	3E
D907	4A	D976	2D	JK901	2F	R749A	2C	R902	8B	R979	7A	C922	3F	C976	3E
D908	4A	D977	3E	JK902	2F	R750	4D	R903	7B	R980	7D	C923	3E	C984	3F
D909	5D	D978	3D	JK903	8F	R751	3E	R905	7A	R981	7F	C924	3E	C985	3F
D910	5E	D979	2D	R700	5D	R752A	3D	R908	6D	R982	7D	C925	2E	C986	2F
D915	3F	D980	2D	R701A	5D	R753	2C	R916	2F	R983	7D	C926	3F	C987	2F
D916	6A	D981	2E	R702A	6E	R754	4D	R918	5A	R984	7D	C927	4E	C988	2F
D917	7D	D982	2E	R705A	3E	R755	2C	R919	2E	R985	2B	C928	2E	C989	4F
D918	8D	D987	6D	R706A	4F	R756	4D	R920	7A	R986	7D	C929	4E	C990	3F
D919	7E	D992	7A	R707A	4E	R757	3D	R921	7A	R992	3D	C930	4E	C991	3E
D920	6D	D993	7A	R708A	7E	R758	2E	R922	2B	R994	5D	C931	2E	C992	1E
D921	7D	D994	2B	R709A	3E	R759	3D	R923	3A	R995	5D	C932	4E	C992A	5E
D923	2B	D995	3A	R710A	4E	R760	3E	R924	2B	R996	5D	C933	5E	C993	7F
D924	8D	D996	2B	R711A	4E	R761	3E	R930	2E	R997	5D	C934	2E	C994	7F
K LOADING MOTOR P.C.B.															
IC1	2J	S1	2H	S4	2G	CN1	2L	W1	2K	W2	3G	C1	2K		

J MAIN P.C.B.


A
B
C
D
E
F
1
2
3
4
5
6
7
8
VIDEO OUT SWITCH
VIDEO OUT
AUX
LINE OUT
IC902A
IC907
IC901A
IC308
IC301
IC802
IC801
IC501
IC302
IC803
IC804
Q401
Q402
Q403
Q523
Q521
Q524
Q522
Q525
Q901A
Q904A
Q903A
Q308
Q303
Q304
Q305
Q813
Q808
Q809
Q811
Q801
Q806
Q802
Q812
Q803
Q805
Q804
Q807
Q514
Q515A
Q516A
Q513
X0165A-2
(REPX0161A)

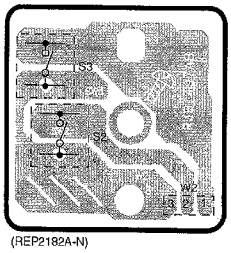
G H I J K L

L SWITCH P.C.B.



(REP2182A-N)

M SWITCH (S2,S3) P.C.B.

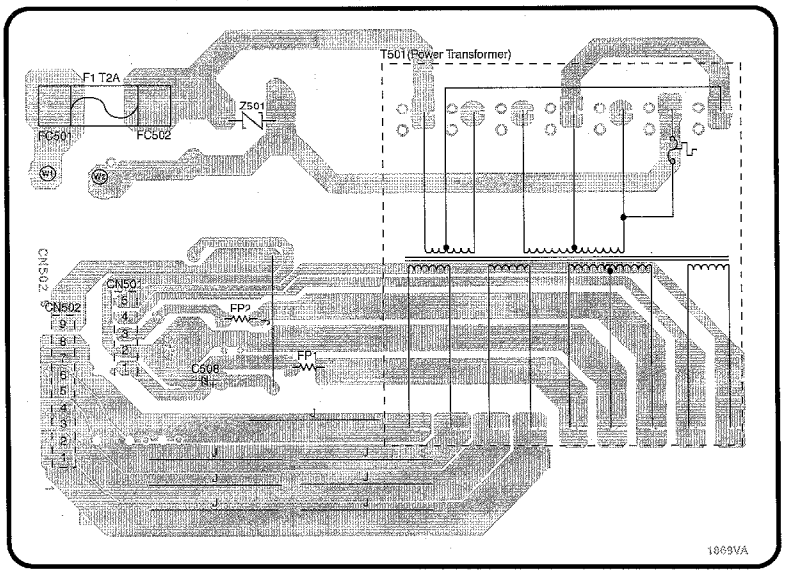


(REP2182A-N)

■ELECTRICAL PARTS LOCATION

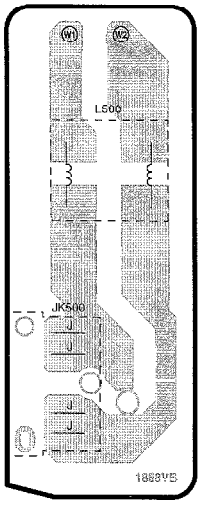
Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.
J MAIN P.C.B.															
IC301	5D	D901A	4E	R347	6E	R540	7B	R854	7F	R948A	2C	C348	6E	C829	6E
IC302	6E	X901A	3D	R348	6D	R542	3A	R855	7E	R949A	2C	C349	7E	C832	6E
IC308	5B	S901A	2F	R349	6E	R543	2B	R856	7F	R959A	2D	C350	6D	C834	7E
IC501	7B	CN100	6A	R350	6D	R544	2C	R857	7E	R976A	3D	C351	6E	C835	7E
IC601	6C	CN101	5B	R351	6E	R545	2C	R859	6D	R981A	2D	C352	6D	C836	6E
IC802	6C	CN503	7B	R352	6D	R546	7B	R860	7D	R984A	2D	C353	6E	C838	6C
IC803	7D	CN504	7E	R353	7E	R547	7B	R861	6B	R985A	2D	C354	6D	C839	6C
IC804	7E	CN903A	4A	R354	6D	R548	2B	R862	6C	R986A	3D	C355	6E	C840	7F
IC901A	3D	CN904A	5A	R355	6D	R549	2B	R863	6C	R987A	3D	C356	6E	C841	7E
IC902A	2B	CN905	3C	R356	6D	R550	2B	R864	6B	R988A	2D	C357	6E	C842	7E
IC907	2D	CN906A	3D	R357	7E	R552	2C	R865	7D	R989A	2D	C358	6D	C843	7E
Q303	5E	CN907	3B	R358	6D	R553	2B	R866	6D	R990A	2D	C359	6D	C844	6D
Q304	6E	CP1	4E	R359	6E	R801	7C	R867	6D	R991	3E	C360	6D	C845	6C
Q305	6E	CP2	4C	R360	6E	R802	7C	R868	6D	R992A	3E	C363	5D	C847	7E
Q308	5C	JK301	5F	R361	5E	R803	7C	R869	6D	R993A	3E	C365	6E	C849	7C
Q401	3B	JK901A	3F	R362	6E	R804	7B	R870	6D	R994A	3E	C366	6E	C850	7C
Q402	3B	R14	3C	R363	7A	R805	7C	R871	6B	C301	4F	C368	4D	C853	6C
Q403	3B	R15	3C	R364	7A	R806	6B	R872	6B	C302	5F	C369	5C	C854	7B
Q514	7A	R16	3C	R365	7A	R807	6C	R874	7D	C303	5F	C370	6D	C855	6C
Q515A	7A	R17	3C	R366	6E	R808	7D	R875	6D	C304	4F	C371	6D	C856	7B
Q516A	7B	R301	4F	R367	6E	R809	6C	R877	6B	C305	5F	C372	5D	C857	6C
Q521	2B	R302	5F	R376	6D	R810	6B	R878	6B	C306	5E	C373	6D	C859	7C
Q522	2B	R303	5F	R377	5B	R811	6C	R880	6D	C307	4E	C374	5D	C860	7B
Q523	2B	R304	5F	R380	5C	R812	6B	R881	7E	C308	5E	C375	5D	C876	6C
Q524	2B	R305	5F	R381	5C	R813	6C	R888	6A	C309	5E	C376	5D	C879	6B
Q525	3A	R306	4F	R382	5C	R814	6C	R891	6B	C310	5E	C377	5B	C880	6C
Q801	6D	R307	4F	R383	5D	R815	6B	R892	6B	C311	4D	C378	5C	C881	6C
Q802	6D	R308	4F	R384	5B	R816	6B	R893	6C	C312	5E	C385	4E	C884	6C
Q803	6B	R309	4E	R385	4A	R817	6B	R894	6B	C313	4D	C390	6E	C885	6C
Q804	7E	R310	5E	R386	5B	R818	6C	R895	6B	C314	5E	C391	5D	C890	6B
Q805	7D	R311	4B	R387	4D	R819	7D	R896	6B	C315	5D	C392	5D	C891	6B
Q806	6C	R312	4B	R388	4D	R820	6C	R898	7B	C316	5E	C393	4F	C895	6C
Q807	7E	R313	4E	R389	6E	R821	6C	R901A	3E	C317	4D	C394	4F	C896	7B
Q808	6B	R314	5E	R391	5D	R822	7D	R902A	3D	C318	5E	C395	4B	C901A	3D
Q809	6B	R315	5C	R392	5C	R823	7D	R903A	3D	C319	5D	C400	3A	C902A	3E
Q811	6C	R316	4B	R393	4E	R824	6C	R904A	3D	C320	5E	C528A	7C	C903A	3E
Q812	6B	R317	5E	R394	4E	R825	6C	R905A	3D	C321	5D	C531	7A	C904A	3E
Q813	6B	R318	5E	R395	5D	R826	7D	R910	3D	C322	5E	C532	7A	C905A	4E
Q815	7B	R319	5E	R396	5D	R827	7C	R911A	3E	C323	5C	C534	7B	C906A	3C
Q901A	3E	R320	4D	R397	4D	R828	6C	R915A	4D	C324	5D	C535	7B	C907A	3C
Q903A	3E	R323	5C	R398	6E	R829	6B	R916A	3E	C325	5D	C538	2C	C908A	3B
Q904A	3E	R324	4C	R399	6A	R830	6C	R917A	3D	C326	5E	C539	2B	C909A	3D
D302	7B	R325	5C	R400	4C	R831	6B	R918A	2E	C327	5D	C540	2C	C937A	2D
D331	6D	R326	4C	R401	4D	R832	6B	R928A	3C	C328	5E	C541	2B	C939A	4F
D332	5B	R327	5B	R402	3D	R833	6B	R929A	3C	C329	5C	C801	7D	C941A	3F
D400	3A	R328	5C	R403	3D	R834	6B	R930A	2C	C330	6E	C803	7D	C942A	2E
D401	3A	R329	5B	R404	3B	R836	6D	R931A	2C	C331	5C	C805	6D	C946	2E
D402	3A	R330	5C	R405	3A	R837	7E	R932A	2D	C332	6E	C806	7D	C947	2D
D403	5B	R331	4B	R406	3A	R838	6D	R933A	2C	C333	6E	C807	7E	C948	2E
D523A	7A	R332	4B	R407	3A	R839	6B	R934A	2C	C334	6E	C808	7F	C949	2E
D525A	7C	R333	5C	R408	3A	R840	6B	R935A	2C	C335	7E	C809	7D	C950	3B
D526	7C	R334	5B	R409	3A	R842	7D	R936A	2C	C336	6D	C810	6B	C951A	3C
D527	7A	R335	5C	R410	3A	R843	6B	R937A	2C	C337	5D	C811	6D	C952	3B
D532A	7A	R336	5C	R411	3A	R844	7D	R938A	2C	C338	5D	C814	7D	C953A	3B
D533A	5A	R337	5C	R412	3A	R845	6E	R939A	2C	C339	5C	C815	7D	C954A	3C
D534A	2B	R339	5C	R413	4D	R846	7E	R940A	2C	C340	5D	C818	7D	C955A	3B
D535A	2B	R340	6D	R508	7E	R847	7D	R941A	2C	C341	5C	C819	7C	C956A	3B
D536	2B	R341	5D	R510	7E	R848	7D	R942A	3C	C342	5D	C820	7D		
D537	2C	R342	5D	R535A	7A	R849	7D	R940A	2C	C343	5D	C821	7D		
D803	6B	R343	6D	R536	7A	R850	7E	R944A	2C	C344	5D	C822	6B		
D804	6B	R344	6D	R537	7A	R851	7E	R945A	2C	C345	6D	C823	6C		
D806	6B	R345	6E	R538	7C	R852	7D	R946	2C	C346	5D	C824	7D		
D807	7C	R346	6E	R539	7C	R853	6D	R947A	2C	C347	5E	C826	6B		
L SWITCH P.C.B.								**M SWITCH(S2,S3) P.C.B.**							
S5	2H	W1	1I					S2	2J	S3	1J	W2	2K		

O POWER TRANSFORMER P.C.B.



(REP2583V)

P POWER SUPPLY P.C.B.



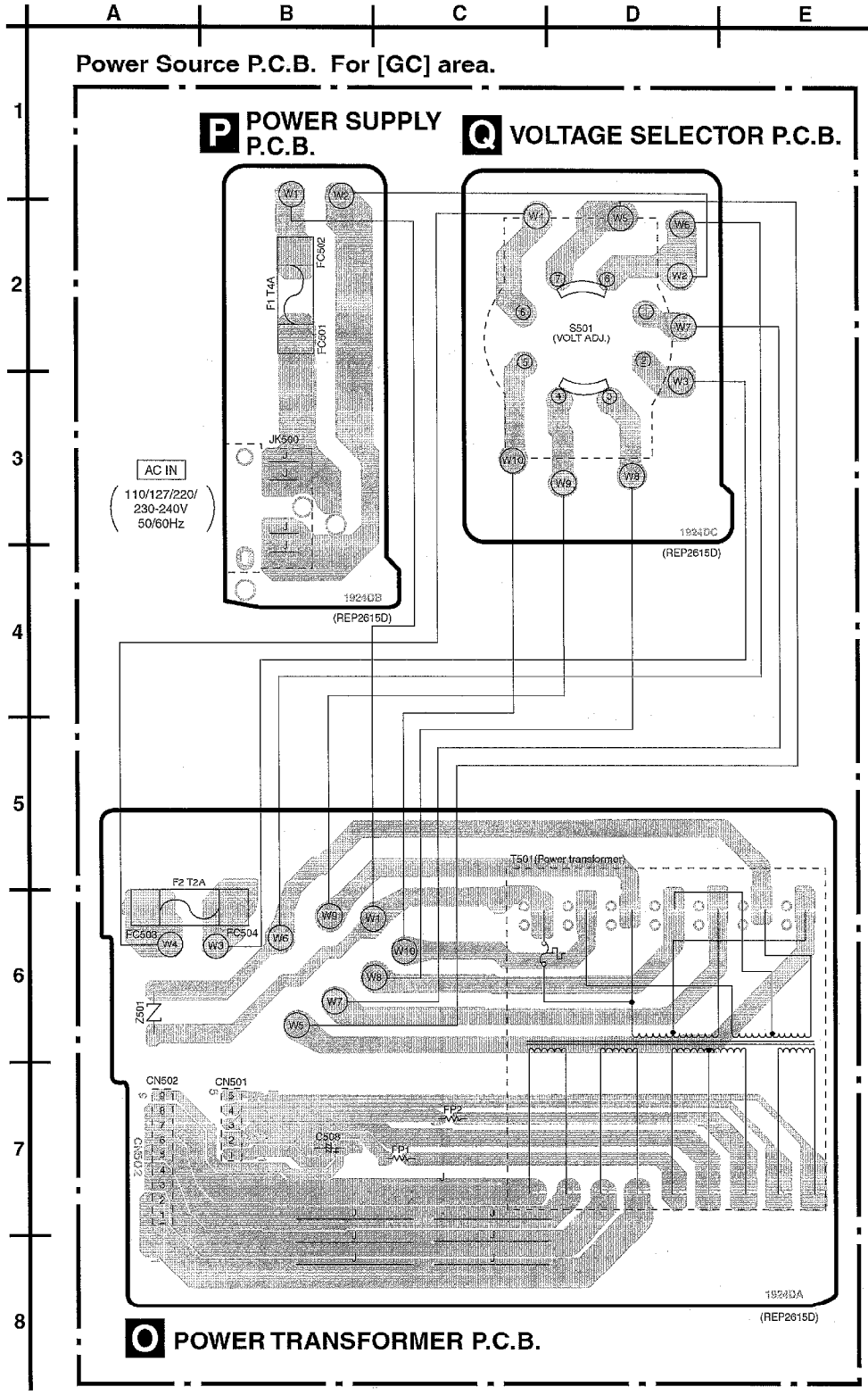
(REP2583V)

AC IN
(220V 50Hz)

■ ELECTRICAL PARTS LOCATION

Ref. No.	Lo. No.	Ref. No.	Lo. No.
O POWER TRANSFORMER P.C.B.			
T501	2D	CN502	3B
F1	2B	FP1	3C
Z501	2C	FP2	3C
W1	2B	FC502	2B
W2	2B	FC501	2B
CN501	3B	C508	3B
P POWER SUPPLY P.C.B.			
L500	6B	W2	5B
W1	5B	JK500	7B

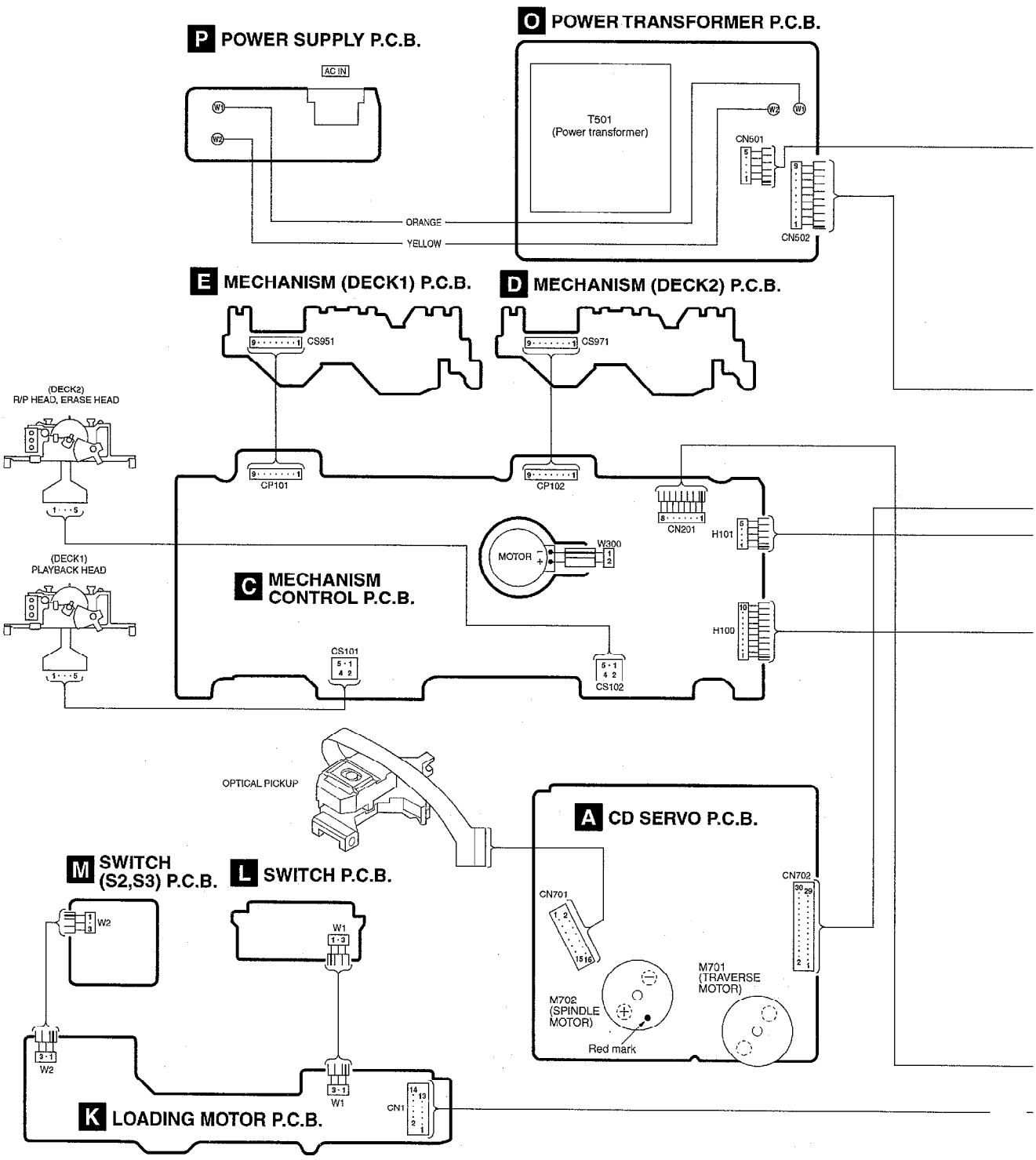
Power Source P.C.B. For [GC] area.

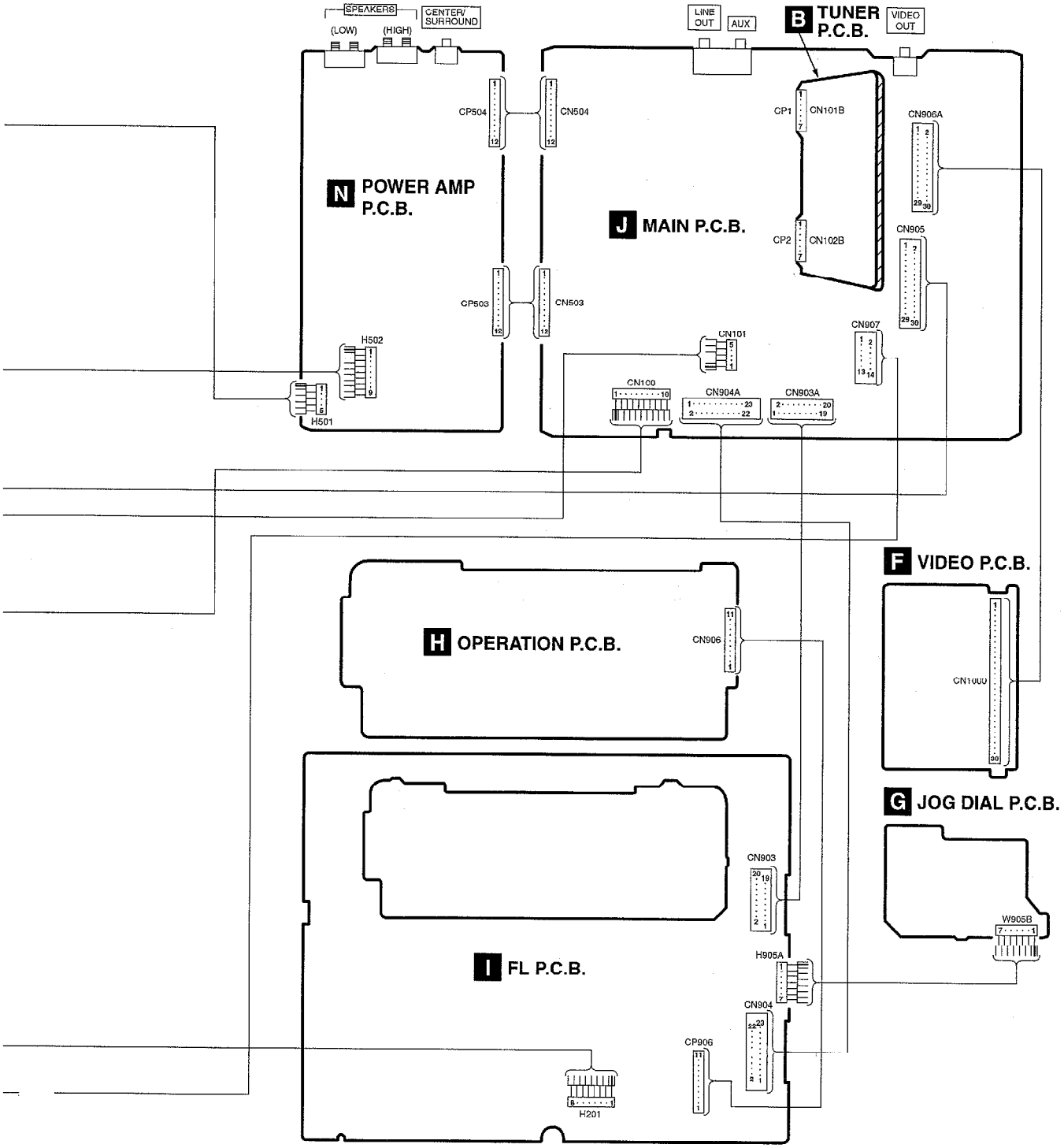


■ ELECTRICAL PARTS LOCATION

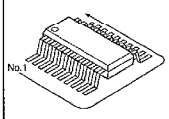
Ref. No.	Lo. No.
O POWER TRANSFORMER P.C.B.	
T501	6D
Z501	6A
CN501	7B
CN502	7A
W1	6C
W3	6A
W4	6A
W5	6B
W6	6B
W7	6B
W8	6C
W9	6B
W10	6C
FC503	6A
FC504	6B
FP1	7C
FP2	7C
C508	7B
P POWER SUPPLY P.C.B.	
F1	2B
W1	1B
W2	1B
JK500	3B
FC501	2B
FC502	2B
Q VOLTAGE SELECTOR P.C.B.	
S501	2D
W2	2D
W3	3D
W4	2C
W5	2D
W6	2D
W7	2D
W8	3D
W9	3D
W10	3C

■ Wiring Connection Diagram

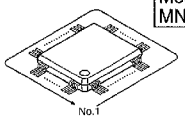



SPEAKERS
(LOW)
(HIGH)
CENTER/ SURROUND
LINE OUT
AUX
B TUNER P.C.B.
VIDEO OUT
CP504
CN504
CP1
CN101B
CN906A
N POWER AMP P.C.B.
J MAIN P.C.B.
CP2
CN102B
CN905
CP503
CN503
CN907
CN101
H502
H501
CN100
CN904A
CN903A
F VIDEO P.C.B.
H OPERATION P.C.B.
CN906
CN1000
G JOG DIAL P.C.B.
CN903
W905B
H905A
I FL P.C.B.
CN904
CP906
H201

■ Type Illustration of IC's, Transistors and Diodes

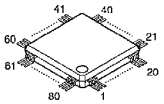


AN8837SBE1	28PIN	CXA1102M-T4	16PIN
BA3835F-E2	18PIN	LA1833MN-TLM	24PIN
BU2040F-E2	16PIN	LC72131MDTRM	20PIN
BU2090F-E2	16PIN	LH532KVA	32PIN
BU4066BCF-E2	14PIN	M51167BFPNA	36PIN
BU9255FS-E2	16PIN	M5228FPE1	14PIN

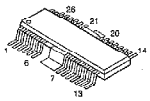


M62433AFP	80PIN
M38067MC388F	80PIN
M38198MCA814	100PIN
MN89103M2	128PIN

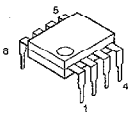
MN662741RPA



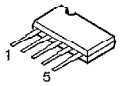
AN8780NSBE2



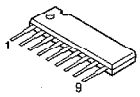
M5218AP



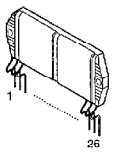
BA7755A



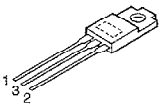
BA6418N



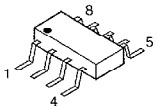
RSN309W44-P



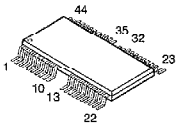
BA178M05T



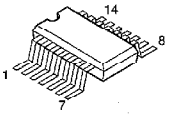
TC7WU04FUT2L
TC7W14FUTE1L
TC7W14FTE12L



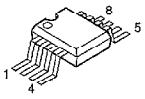
M44260CTP7



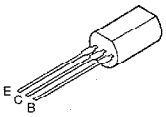
TC4013BFN



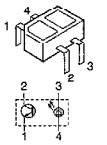
BA4558FDXE2

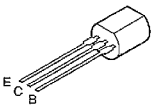


2SC3940AQSTA

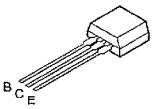


0N2180RLC





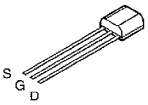
2SB621ARTA
2SB621ARSTA
2SB621RTA
2SC2001KTA
2SD1302STA
2SD965RTA
KSD471ACYGTA

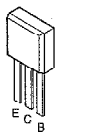


2SA933SSTA
2SC1740SLNET
2SC1740SSTA
2SD1450STA
2SD2144STA
RVTDTA114EST
RVTDTA114TST

RVTDTC114EST
RVTDTC114TST
RVTDTC114YST
RVTDTC124EST

2SJ164QRTA

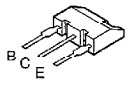




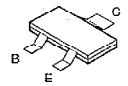
2SC2784FTA
2SC2785FTA
2SC2787LTA
2SC3311ARTA
2SD1020HTA
BA1A4MTA

BA1A4ZTA
BA1L4MTA
BA1L4ZTA
BN1A4MTA
BN1L3NTA

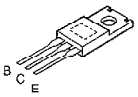
2SB1238QRTV2
2SD1859QRTV2



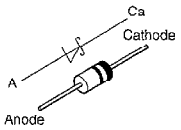
2SA1037AKSTX
DTC114YKA146

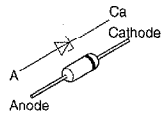


2SB1566E
2SD2395E



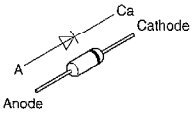
RK306LFU1





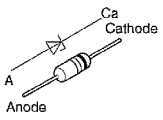
MTZJ3R6BTA
MTZJ4R7BTA
MTZJ5R1BTA
MTZJ5R1CTA
MTZJ5R6BTA
MTZJ6R8ATA

MTZJ8R2BTA
MTZJ9R1CTA
MTZJ11CTA
MTZJ16ATA
MTZJ24DTA
MTZJ30DTA

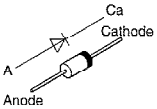


1SS291TA
MA165TA
RVD1SS133TA

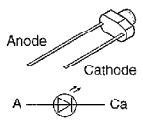
MA4020LTA



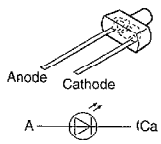
1D3E
1N5402BM21
RL1N4003N02



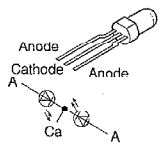
SLR325DCT31



LNJ301MPUJAD



SML79423C



■ Terminal Function of IC's

• IC701 (AN8837SBE1): SERVO AMP

No.	Mark	I/O Division	Function
1	PDE	I	Tracking signal input terminal 1 (E ch)
2	PDF	I	Tracking signal input terminal 2 (F ch)
3	Vcc	I	Power supply terminal
4	PDA	I	Focus signal input terminal 1 (A ch)
5	PDB	I	Focus signal input terminal 2 (B ch)
6	LPD	I	Laser PD signal
7	LD	O	Laser power auto control output
8	RF	O	RF amp terminal
9	RF IN	I	AGC input terminal
10	CSBRT	I	OFTR capacitor connection terminal
11	CEA	I	HPF-AMP capacitor connection terminal
12	BDO	O	Dropout detection control
13	LDON	I	LD APC ON/OFF ("H": ON, "L": OFF)
14	GND	—	GND terminal

No.	Mark	I/O Division	Function
15	/RFDET	O	RF det. signal output terminal ("L": det.)
16	CROSS	O	Tracking error zero cross output
17	OFTR	O	Off track detection ("H": det.)
18	VDET	O	Oscillation det. signal ("H": det.)
19	ENV	O	Envelope signal output terminal
20	ENVOFF	I	Not used, connected to power supply
21	TEBPF	O	Oscillation detect output terminal
22	TEN	I	Tracking error signal
23	TEOUT	O	Tracking error signal
24	FEOUT	O	Focus error signal
25	FEN	I	Focusing error signal
26	VREF	O	Reference voltage output terminal
27	TBAL	I	Tracking balance adj. input
28	FBAL	I	Focus balance adj. input

• IC703 (AN8780NSBE2): FOCUS COIL / TRACKING COIL / TRAVERSE MOTOR / SPINDLE MOTOR DRIVE

No.	Mark	I/O Division	Function
1	/RST	—	Not used, open
2	NC	—	———
3	IN2	I	Motor driver (2) input
4	PC2	I	Turntable motor drive signal ("L": ON)
5	NC	—	———
6	IN1	I	Motor driver (1) input
7	PVcc1	I	Driver power supply terminal (1)
8	PGND1	—	Driver GND terminal (1)
9	NC	—	Not used, connected to GND
10	D1–	O	Motor driver (1) output terminal (–)
11	D1+	O	Motor driver (1) output terminal (+)
12	D2–	O	Motor driver (2) output terminal (–)
13	D2+	O	Motor driver (2) output terminal (+)

No.	Mark	I/O Division	Function
14	D3–	O	Motor driver (3) output terminal (–)
15	D3+	O	Motor driver (3) output terminal (+)
16	D4–	O	Motor driver (4) output terminal (–)
17	D4+	O	Motor driver (4) output terminal (+)
18	NC	—	———
19	PGND2P	—	Driver GND terminal (2)
20	PVcc2	I	Driver power supply (2)
21	Vcc	I	Power supply terminal
22	VREF	I	Reference voltage input terminal
23	IN4	I	Motor driver (4) input
24	IN3	I	Motor driver (3) input
25	RSTIN	I	Reset terminal (Not used, connected to GND)
26	NC	—	Not used, connected to GND

• IC702 (MN662741RPA): SERVO PROCESSOR / DIGITAL SIGNAL PROCESSOR / DIGITAL FILTER / D/A CONVERTER

No.	Mark	I/O Division	Function
1	BCLK	O	Serial bit clock output
2	LRCK	O	L/R discriminating signal output
3	SRDATA	O	Serial data
4	$DV_{DD}1$	I	Power supply (digital circuit) terminal
5	$DV_{SS}1$	—	GND (digital circuit) terminal
6	TX	O	Digital audio interface signal
7	MCLK	I	Command clock signal
8	MDATA	I	Command data signal
9	MLD	I	Command load signal ("L": LOAD)
10	SENSE	O	Sense signal (OFT, FESL, NACEND, NAJEND, POSAD, SFG) (Not used, open)
11	/FLOCK	O	Optical servo condition (focus) ("L": lead-in) (Not used, open)
12	/TLOCK	O	Optical servo condition (tracking) ("L": lead-in) (Not used, open)
13	BLKCK	O	Sub-code block clock (f=75Hz)
14	SQCK	I	Sub-code Q register clock
15	SUBQ	O	Sub-code Q data
16	DMUTE	—	Muting input ("H": MUTE) (Not used, connected to GND)
17	STAT	O	Status signal (CRC, CUE, CLVS, TTSTOP, FCLV, SQCK)
18	/RST	I	Reset signal ("L": reset)
19	SMCK	—	System clock (f=4.2336MHz) (Not used, open)
20	PMCK		Frequency division clock signal ($f=1/192 \times$ Crystal OSC (16.9344MHz) =88.2kHz) (Not used, open)
21	TRV	O	Traverse servo control
22	TVD	O	Traverse drive signal

No.	Mark	I/O Division	Function
23	PC	O	Turntable motor drive signal ("L": ON)
24	ECM	O	Turntable motor drive signal (Forced mode)
25	ECS	O	Turntable motor drive signal (Servo error signal)
26	KICK	O	Kick pulse output
27	TRD	O	Tracking drive signal output
28	FOD	O	Focus drive signal output
29	VREF	I	D/A drive output (TVD, ECS, TRD, FOD, FBAL, TBAL) normal voltage input terminal
30	FBAL	O	Focus balance adj. output
31	TBAL	O	Tracking balance adj. output
32	FE	I	Focus error signal (analog input)
33	TE	I	Tracking error signal (analog input)
34	RFENV	I	RF envelope signal
35	VDET	I	Oscillation det. signal ("H": det.)
36	OFTR	I	Off track signal ("H": Off track)
37	TRCRS	I	Track cross signal input
38	/RFDET	I	RF detection signal ("L": detection)
39	BDO	I	Dropout detection signal ("H": dropout)
40	LDON	O	Laser power control ("H": ON)
41	TES	O	Tracking error shunt output ("H": dropout)
42	PLAY	O	Play signal ("H": play) (Not used, open)
43	WVEL	O	Double velocity status signal ("H": double) (Not used, open)
44	ARF	I	RF signal input

No.	Mark	I/O Division	Function
45	IREF	I	Reference current input
46	DRF	I	DSL bias terminal (Not used, open)
47	DSLF	I/O	DSL loop filter terminal
48	PLLF	I/O	PLL loop filter terminal
49	VCOF	I/O	VCO loop filter terminal
50	$AV_{DD}2$	I	Power supply (analog circuit) terminal 2
51	$AV_{SS}2$	—	GND (analog circuit) terminal
52	EFM	O	EFM signal (Not used, open)
53	PCK	O	PLL extract clock (f=4.3218MHz) (Not used, open)
54	PDO	O	Phase compared signal of EFM and PCK (Not used, open)
55	SUBC	O	Sub-code serial output clock
56	SBCK	I	Sub-code serial input data
57	V_{SS}	—	GND terminal
58	X1	I	Crystal oscillator terminal (f=16.9344MHz)
59	X2	O	
60	V_{DD}	I	Power supply terminal
61	BYTCK	O	Byte clock signal (Not used, open)
62	/CLDCK	O	Sub-code frame clock signal (f=CLDCK=7.35kHz: Normal)
63	FCLK	O	Crystal frame clock (Not used, open)
64	IPFLAG	O	Interpolation flag terminal

No.	Mark	I/O Division	Function
65	FLAG	O	Flag terminal (Not used, open)
66	CLVS	O	Turntable servo phase synchro signal ("H": CLV, "L": Rough servo) (Not used, open)
67	CRC	O	Sub-code CRC check terminal ("H": ON, "L": NG) (Not used, open)
68	DEMPH	O	De-emphasis ON signal ("H": ON) (Not used, open)
69	RESY	O	Re-synchronizing signal of frame sync. (Not used, open)
70	/RST2	I	Reset terminal after "MASH" circuit (Not used, connected to GND)
71	/TEST	I	Test terminal (Normal: "H") (Not used, connected to power supply)
72	$AV_{DD}1$	I	Power supply (analog circuit) terminal (1)
73	OUTL	O	L ch audio signal
74	$AV_{SS}1$	—	GND (analog circuit) terminal (1)
75	OUTR	O	R ch audio signal
76	RSEL	I	Polarity direction control terminal of RF signal (Not used, connected to power supply)
77	CSEL	I	Frequency control terminal of crystal oscillator (Not used, connected to GND)
78	SR DATA	I	Serial data input
79	LRCK	I	L ch/R ch clock signal input
80	BCLK	I	Audio bit clock input

• IC301 (M62433AFP): DIGITAL SOUND CONTROLLER

Pin No.	Terminal Name	I/O	Function
1	PS – IN	I	Surround (R-L) input
2	PS + IN	I	Surround phase shift filter
3	K IN1	–	Key control input (Not used, open)
4	K OUT1	–	Key control output (Not used, open)
5	TAPE REC1	O	Tape record signal output
6	EXT REC1	O	External record signal output
7	VCR REC1	–	VCR record signal output (Not used, open)
8	DPL1	–	Tone input (Not used, open)
9	F1F1	I	Graphic equalizer impedance signal input
10	F1O1	O	Graphic equalizer buffer amplifier output
11	FIN1	I	Graphic equalizer buffer amplifier input
12	F2F1	I	Graphic equalizer impedance signal input
13	F2O1	O	Graphic equalizer buffer amplifier output
14	F2IN1	I	Graphic equalizer buffer amplifier input
15	F3F1	I	Graphic equalizer impedance signal input
16	F3O1	O	Graphic equalizer buffer amplifier output
17	F3IN1	I	Graphic equalizer buffer amplifier input
18	F4F1	I	Graphic equalizer impedance signal input
19	F4O1	O	Graphic equalizer buffer amplifier output
20	F4IN1	I	Graphic equalizer buffer amplifier input
21	F5F1	I	Band pass filter input (Connected to GND)
22	GEQOUT1	O	Tone output
23	VOL IN1	I	L ch rudder volume input
24	VOL OUT1	O	L ch rudder volume output
25	BB1	–	Bass boost capacity input (Not used, connected to GND)
26	BUF IN1	I	Bass boost output amplifier (+) input
27	BUF NF1	I	Bass boost output amplifier (–) input
28	BUF OUT1	O	Bass boost output amplifier output
29	KARA	O	Signal select output
30	/TUNER	–	Not used, connected to GND
31	DV_{DD}	I	Power supply
32	CLK	I	Serial data clock input
33	DATA	I	Control data input
34	LATCH	I	Latch signal input
35	DGND	–	GND
36	AV_{DD}	I	Power supply
37	BUF OUT2	O	Bass boost output amplifier output
38	BUF NF2	I	Bass boost output amplifier (–) input
39	BUF IN2	I	Bass boost output amplifier (+) input
40	BB2	–	Bass boost capacity input (Not used, connected to GND)

Pin No.	Terminal Name	I/O	Function
41	VOL OUT2	O	R ch rudder volume output
42	VOL IN2	I	R ch rudder volume input
43	GEQ OUT2	O	Tone output
44	F5F2	I	Band pass filter input (Connected to GND)
45	F4IN2	I	Graphic equalizer buffer amplifier input
46	F4O2	O	Graphic equalizer buffer amplifier output
47	F4F2	I	Graphic equalizer impedance signal input
48	F3IN2	I	Graphic equalizer buffer amplifier input
49	F3O2	O	Graphic equalizer buffer amplifier output
50	F3F2	I	Graphic equalizer impedance signal input
51	F2IN2	I	Graphic equalizer buffer amplifier input
52	F2O2	O	Graphic equalizer buffer amplifier output
53	F2F2	I	Graphic equalizer impedance signal input
54	F1IN2	I	Graphic equalizer buffer amplifier input
55	F1O2	O	Graphic equalizer buffer amplifier output
56	F1F2	I	Graphic equalizer impedance signal input
57	DPL2	–	Tone input (Not used, open)
58	VCR OUT2	–	VCR record signal output (Not used, open)
59	EXT REC2	O	External record signal output
60	TAPE REC2	O	Tape record signal output
61	MIC IN	I	Microphone input
62	K OUT2	–	Key control output (Not used, open)
63	K IN2	–	Key control input (Not used, open)
64	BP OUT	O	Band pass filter output
65	BP IN	I	Band pass filter input
66	MD	–	Not used, open
67	TUNER	I	R ch tuner signal input
68	TAPE	I	R ch tape signal input
69	CD	I	R ch CD signal input
70	EXT	–	Not used, open
71	AUX	I	R ch AUX signal input
72	AV_{SS}	I	Power supply
73	AGND	–	GND
74	AUX	I	L ch AUX signal input
75	EXT	–	Not used, open
76	CD	I	L ch CD signal input
77	TAPE	I	L ch tape signal input
78	TUNER	I	L ch tuner signal input
79	MD	–	Not used, open
80	DELIN	I	Surround (R-L) input

• IC901 (M38198MCA814): SYSTEM CONTROL/FL DRIVE

Pin No.	Terminal Name	I/O	Function
1	CRT	I	CRT timer
2	TPS IN	I	TPS signal input
3	DECK1	I	Deck 1 mechanism condition input
4	DECK2	I	Deck 2 mechanism condition input
5–8	KEY4–KEY1	I	Operation switch signal input
9	SER1	O	Serial clock output for IC903 and IC904
10	ECHO	O	Echo level control signal output (No used, open)
11	SER2	O	Serial data/clock output for IC301 and IC903
12	SER3	O	Serial data output for IC301 and IC904
13	I/O	–	(Not used, connected to GND via resistor)
14	SPLATCH	O	Latch signal output for digital sound controller (IC301)
15	SPEANA INPUT	I	Spectrum analyzer signal input
16	I/O	–	(Not used, connected to GND via resistor)
17	DCDET	I	DC detect input
18	MMREQ	I	Mecha micon request signal input
19	MMCS	I	Mecha micon chip select input
20	MMCLK	I	Mecha micon clock input
21	MMDOUT	O	mecha micon data output
22	MMDIN	I	mecha micon data input
23	VOL JOGA	I	Volume control signal input
24	VOL JOGB	I	
25	PLLDATA	O	Tuner PLL data output
26	PLLCE	O	Tuner chip enable output
27	ECHO ON/OFF	O	Echo ON/OFF control signal output
28	PLLCLK	O	Tuner PLL clock output
29	I/O	–	(Not used, connected to GND via resistor)
30	I/O	–	(Not used, connected to GND via resistor)
31	RMT	I	Remote controller signal input

Pin No.	Terminal Name	I/O	Function
32	SD IN	I	Station detector signal input for tuner circuit
33	P. CONT	O	Power control signal output
34	SYNC	I	AC power source detect signal input
35	/RESET	I	System reset signal input
36	XCIN	I	Oscillator connection (Sub clock : 32.768 kHz)
37	XCOUT	O	
38	XIN	I	Oscillator connection (Main clock : 6.0 kHz)
39	XOUT	O	
40	Vss	–	GND
41	MBP1	O	Beat proof control signal output
42	MBP2	O	
43	J JOG A	I	AI Equalizer control signal input
44	J JOG B	I	
45	MKCLK	O	Deck control clock output
46	SPE CONT A	O	Spectrum analyzer band control signal output
47	SPE CONT B	O	
48	SPE CONT C	O	
49–61	GRD1–GRD13	O	LCD grid signal output
62–90	REG32–REG4	O	LCD segment signal output
91	Vcc	I	Power supply (+5V)
92–94	REG3–REG1	O	LCD segment signal output
95	REGION IN	I	Region select signal input
96	STEREO	I	Tuner stereo signal detect input
97	I/O	–	(Not used, connected to GND via resistor)
98	VP	–	Power supply (–30V)
99	Vss	–	GND
100	VREF	I	Reference voltage input

• IC901A (M38067MC388F): SYSTEM CONTROL

Pin No.	Terminal Name	I/O	Function
1	NC	—	Connected to GND
2	CHNGRSW1	I	CD changer mechanism switch signal input 1
3	CHNGRSW2	I	CD changer mechanism switch signal input 2
4~8	NC	—	Connected to GND
9	SQCK	O	Serial clock output
10	NC	—	Connected to GND
11	SUBQ	I	Serial data input
12	DSP-DAT	–	Data output for karaoke DSP (Not used, connected to GND)
13	DSP-CK	–	Clock output for karaoke DSP (Not used, connected to GND)
14	DSP-CS	–	Chip select signal output for karaoke DSP (Not used, connected to GND)
15	DSP-RST	–	Reset signal output for karaoke DSP (Not used, connected to GND)
16	MICLEV	–	Microphone level detect signal input (Not used, connected to GND)
17	BLKCK	I	Block clock input
18	MOTOR+	O	CD mechanism motor control signal output
19	MOTOR–	O	CD mechanism motor control signal output
20	CS	I	Serial communication control signal input
21	CLK	O	Clock output for tuner/amplifier
22	DO	O	Serial communication data output
23	DI	I	Serial communication data input
24	REQ	O	Serial communication request signal output
25	HALT	I	Power failure detect signal input
26	CNVS	—	Connected to GND
27	RST	I	Reset signal input
28, 29	NC	—	Connected to GND
30	CFI	I	Crystal oscillator input (6 MHz)
31	CFO	O	Crystal oscillator output (6 MHz)
32	V_{SS}	—	GND
33	LD CLR	–	LED drive signal output (Not used, connected to GND)
34	LD STB	–	LED drive signal output (Not used, connected to GND)

Pin No.	Terminal Name	I/O	Function
35	LD CLK	–	LED drive signal output (Not used, connected to GND)
36	LD DATA	–	LED drive signal output (Not used, connected to GND)
37	PWCNT	O	Power control signal output
38	CSEL2	—	Function select terminal (Not used, connected to GND)
39	CSEL1	—	Function select terminal (Not used, connected to GND)
40	SEL3	—	Function select terminal (Not used, connected to GND)
41~44	NC	—	Connected to GND
45	V MUTE	O	Video muting signal output
46	V MODE	I	NTSC/PAL select signal input
47	$\overline{\text{EMPH}}$	O	Emphasis control signal output
48	HRDY	I	Ready signal input
49	HINT	I	Soft interrupt signal input
50	VRST	O	Reset signal output for IC1000
51	HCK	O	Clock output for IC1000
52	HDI	I	Data input from IC1000
53	HDO	O	Data output for IC1000
54	HSEL	O	Select signal output for IC1000
55~66	NC	—	Connected to GND
67	RESTSW	I	Rest switch signal input
68	SRVRST	O	Reset signal output for CD servo IC
69	STAT	I	Status signal input
70	MLD	O	Command load signal output
71	MDATA	O	Command data output
72	MCLK	O	Command clock output
73	V_{DD}	I	Power supply input
74	VREF	I	Reference voltage input (+)
75	VREF–	–	Reference voltage GND
76, 77	KEY1, 2	–	Operation switch signal input (Not used, connected to VDD)
78~80	NC	—	Connected to GND

• IC1000 (MN89103M2): MPEG VIDEO AUDIO DECODER

Pin No.	Mark	I/O Division	Function description	Remarks
1	NC	—	———	Not used, open
2	V_{SS}	—	GND terminal	0V
3	CD-BCK	I	CD bit clock input	F=2.822MHz
4	CD-DATA	I	CD Serial data input	———
5	CD-LRCK	I	CD LR clock input	F=44.1kHz
6	CD-C2PO	I	Data Error Flag signal input	Accepts a flag signal when serial data error is uncorrectable
7 ~ 9	NC	—	———	Not used, open
10 ~ 15	MD0 ~ MD5	I/O	DRAM/ROM data I/O lines	Used to exchange data with DRAM (IC1002) and ROM (IC1001). Data used to control MPEG (IC1000) is transferred from ROM, while video data with CD-ROM format comes from DRAM.
16	V_{SS}	—	GND terminal	0V
17	MD6	I/O	DRAM/ROM data I/O lines	Used to exchange data with DRAM (IC1002) and ROM (IC1001).
18	$V_{DD}3$	I	Power supply terminal	+3.0V
19	MD7	I/O	DRAM/ROM data I/O lines	Used to exchange data with DRAM (IC1002) and ROM (IC1001).
20	I/O V_{SS}	—	GND terminal	0V
21	MD8	I/O	DRAM/ROM data I/O lines	Used to exchange data with DRAM (IC1002) and ROM (IC1001).
22	$V_{DD}3$	I	Power supply terminal	+3.0V
23 ~ 29	MD9 ~ MD15	I/O	DRAM data/ROM address I/O lines	Used to exchange data with DRAM (IC1002) and ROM (IC1001).
30 ~ 36	NC	—	———	Not used, open
37	MCE	O	ROM chip enable signal output	Low selects ROM (IC1001)
38	MWE	O	DRAM write enable signal output	Low write to IC1002, High reads from IC1002.
39	V_{SS}	—	GND terminal	0V
40	CAS	O	DRAM LCAS/ROM address output	Lower address/data command output for DRAM (IC1002).
41	$V_{DD}3$	I	Power supply terminal	+3.0V
42	RAS0	O	DRAM RAS0 output	Higher address output for DRAM (IC1002)
43	RAS1	—	———	Not used, open
44 ~ 46	MA10 ~ MA8	O	DRAM/ROM address output	Address output for DRAM (IC1002)
47	V_{SS}	—	GND terminal	0V
48	MA7	O	DRAM/ROM address output	Address output for DRAM (IC1002)
49	$V_{DD}3$	I	Power supply terminal	+3.0V
50 ~ 52	MA6 ~ MA4	O	DRAM/ROM address output	Address output for DRAM (IC1002)
53	V_{SS}	—	GND terminal	0V
54	MA3	O	DRAM/ROM address output	Address output for DRAM (IC1002)

Pin No.	Mark	I/O Division	Function description	Remarks
55	VDD3	I	Power supply terminal	+3.0V
56 ∫ 58	MA2 ∫ MA0	O	DRAM/ROM address output	Address output for DRAM (IC1002).
59	RESERVED	—	GND terminal	0V
60	RESET	I	Reset signal input	Active low reset signal from the system controller (IC901A).
61	VDD MAX-IN	I	Power supply terminal	+5.0V
62 ∫ 65	NC	—	———	Not used, open
66	AVDD	I	Power supply terminal	+3.0V
67	COMPOS-OUT	O	Composite video signal output	Video output signal video output jack (JK901A).
68	AGND		GND terminal	0V
69	Y-OUT	O	Y signal output	Not used, open
70	AV_{DD}	I	Power supply terminal	+3.0V
71	AGND	—	GND terminal	0V
72	VGAIN	I	Video gain signal input	9.1kΩ resister connected between terminal and ground.
73	VREF	I	Internal reference voltage	0.1μF capacitor connected between terminal and ground.
74	AV_{DD}	I	Power supply terminal	+3.0V
75	C-OUT	O	C signal output	Not used, open
76	AGND	—	GND terminal	0V
77 • 78	CLKSEL (0) • CLKSEL (1)	I	Clock selector signal input	10kΩ resistor connected between terminal and +3.0V line.
79	CLKSEL (2)	I	Clock selector signal input	10kΩ resistor connected between terminal and ground.
80	V_{SS}	—	GND terminal	0V
81	CLKSEL (3)	I	Clock selector signal input	10kΩ resistor connected between terminal and ground.
82	$V_{DD}3$	I	Power supply terminal	+3.0V
83 • 84	RESERVED	—	GND terminal	0V
85	AGND	—	GND terminal	0V
86	DA XCK	I	Audio read clock input	F=16.9344MHz
87	AV_{DD}	I	Power supply terminal	+3.0V
88 ∫ 90	RESERVED	—	GND terminal	0V
91	PIO 0	—	———	Not used, open
92	RESERVED	—	GND terminal	0V
93	PIO 2	—	———	Not used, open
94 ∫ 98	NC	—	———	Not used, open

Pin No.	Mark	I/O Division	Function description	Remarks
99	V_{SS}	—	GND terminal	0V
100	NC	—	———	Not used, open
101	PIO3			
102	$V_{DD}3$	I	Power supply terminal	+3.0V
103	VCKPI01	—	———	Not used, open
104	V_{SS}	—	GND terminal	0V
105	GCK			
106	VCK	I	Video read clock input	F=27MHz
107	DA-EMP	I	DAC emphasis input	High frequency emphasis signal input
108	DA-LRCK	O	Audio LR clock output	F=44.1kHz
109	V_{DD}MAX OUT	I	Power supply terminal	+5.0V
110	DA-DATA	O	Audio serial data output	F=2MHz (T=0.5ms)
111	DA-BCK	O	Audio bit clock output	———
112	HD0-OUT	O	Address/data output	Address/data signal to IC901A
113	HRDY	O	Ready signal output	Ready signal output to IC901A
114	HINT	I/O	Soft interrupt signal	Soft interrupt signal from/to IC901A
115	CDG-SCK	O	Serial clock signal	Serial clock signal to IC702
116	V_{SS}	—	GND terminal	0V
117	HCK	I	Serial clock signal input	Receive a clock signal from IC901A
118	$V_{DD}3$	I	Power supply terminal	+3.0V
119	HD IN	I	Address/data input	Address/data signal from IC901A
120	$V_{DD}3$	I	Power supply terminal	+3.0V
121	HSEL	I	Serial data signal input	Receive a data signal from IC901A
122	CDG-SDATA	I	Serial data signal input	Serial data signal from IC702
123	CDG-VFSY	I	Sub-code frame clock signal	Receive a sub-code frame signal from IC702
124	CDG-SOS1	I	Sub-code block clock signal	Receive a sub-code block signal from IC702
125 ~ 128	NC	—	———	Not used, open

■ Measurements and Adjustments

Tuner Section

Measuring Instruments and Special Tools

- AM signal generator (AM-SG)
- EVM-AC (AC Electronic voltmeter)
- EVM-DC (DC Electronic voltmeter)
- IF sweemar scope
- AM loop antenna

Note :

- Trimmer will be instability that once you tighten, please adjust with tighten slowly from loosened condition.
- Adjust OSC coil and IFT with nonmetal driver.

AM IF Adjustment

1. Connect the instrument as shown in Fig. 1.
2. Set the unit to AM mode.
3. Apply signal as shown in Fig. 1 from AM-SG.
4. Adjust **Z102** so that the output frequency is maximized in Fig. 2.

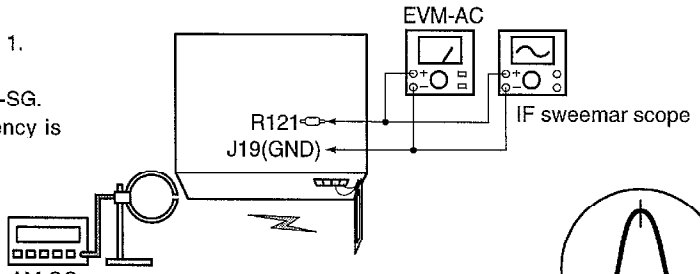


Fig. 1

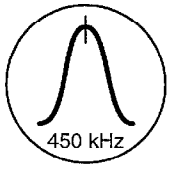


Fig. 2

AM RF Adjustment

1. Connect the instrument as shown in Fig. 3.
2. Set the unit to AM mode.
3. Set AM-SG to 522 kHz.
4. Receive 522 kHz in the unit.
5. Adjust **Z101 (OSC)** so that the EVM-AC is maximized.
6. Set AM-SG to 603 kHz.
7. Receive 603 kHz in the unit.
8. Adjust **Z101 (ANT)** so that the EVM-AC is maximized.
9. Set AM-SG to 522 kHz.
10. Receive 522 kHz in the unit.
11. Adjust **Z101 (OSC)** so that the EVM-DC value is within **1.1 ±0.5 V.**
12. Repeat step 3 to 11 and adjust again.

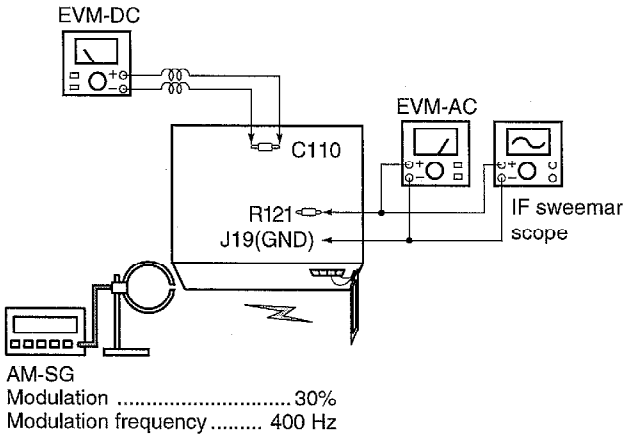


Fig. 3

Adjustment point

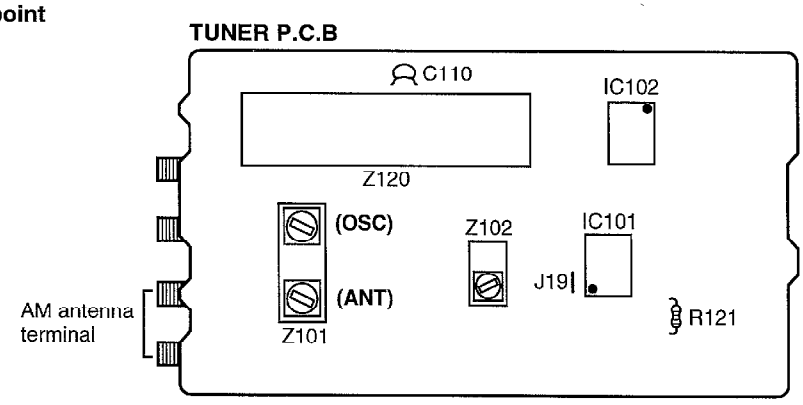


Fig. 4

Tape Deck Section

Measuring Instruments and Special Tools

- Frequency counter
- EVM-AC (AC Electronic voltmeter)
- Test tape
  QZZCFM : Head azimuth adjustment
  QZZCWAT : Tape speed adjustment
- Normal position (Type I) tape (recordable)
- High position (Type II) tape (recordable)

HEAD AZIMUTH ADJUSTMENT (DECK 1/2)

Note:
If you wish to adjust the head azimuth with removing from the units, be sure to adjust with adhering the cassette tape closely to the mechanism by pushing the center of cassette tape with your finger. (Shown in Fig. 5)

1. Connect the measuring instrument as shown in Fig. 6.
2. Replace azimuth screws for both forward and reverse direction after removing the screw-locking bond left on the head base.
   Fine adjustment of azimuth can not be performed with remaining the bond on the head base.
   (Supply part No. of azimuth adjusting screw: **RHD17015**)
3. Playback the azimuth adjustment portion (8 kHz, -20 dB) of test tape (QZZCFM). Adjust the azimuth adjusting screw until the outputs of the L/R-ch are maximized. (Refer to Fig. 7)
   Make sure that the difference in the peak level between the left and right channels is within −0.5 dB.
4. Perform the same adjustment in reverse playback mode.

Checking of the level difference forward and reverse directions

5. Playback the playback gain adjustment portion (315 Hz, 0 dB) of test tape (QZZCFM). Check if level difference between forward and reverse direction is within 1.5 dB.
6. After the adjustment, apply screwlock to the azimuth adjusting screw.

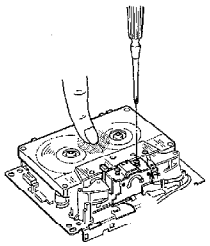


Fig. 5

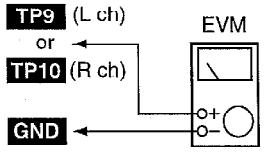


Fig. 6

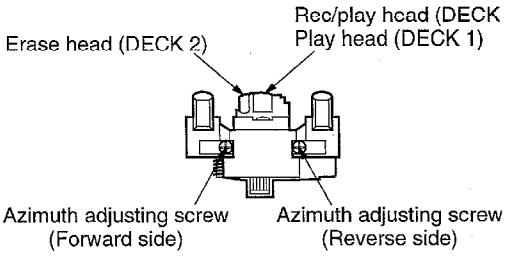


Fig. 7

TAPE SPEED ADJUSTMENT (DECK1/2)

1. Connect the measuring instrument as shown in Fig. 8.
2. Start playback the middle portion of the test tape (QZZCWAT).
3. Adjust motor VR (shown in Fig. 9) so that the output frequency is within the value as shown below:

DECK2 FWD playback: 3000 ±60Hz
DECK2 REV playback: ±45Hz to the FWD playback of DECK2
DECK1 FWD playback: ±60Hz to the FWD playback of DECK2
DECK1 REV playback: ±60Hz to the REV playback of DECK2

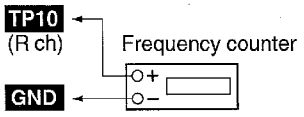


Fig. 8

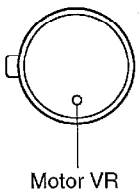


Fig. 9

PLAYBACK GAIN ADJUSTMENT (DECK1/2)

1. Connect the measuring instrument as shown in Fig.10.
2. Playback the gain adjusted portion (315Hz, 0dB) of the test tape (QZZCFM).
3. Adjust VR101,102 and 103,104 to the output is within the value as shown below:

DECK1: (L) VR101, (R) VR102
DECK2: (L) VR103, (R) VR104 **:Standard value: 276 ±30mV**

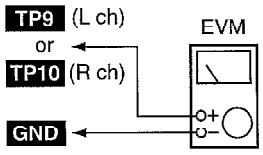


Fig. 10

BIAS FREQUENCY ADJUSTMENT (DECK2)

1. Connect the measuring instrument as shown in Fig.11.
2. Insert the normal position (Type I) tape (recordable) into DECK2 and set the unit to "REC" mode.
3. Adjust L201 so that the output frequency is within the standard value.

Standard value: 98 ±8 kHz

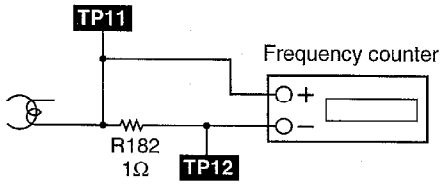


Fig. 11

REC BIAS CHECK (DECK2)

1. Connect the measuring instrument as shown in Fig. 12.
2. Insert the normal position tape or high position tape into DECK2, and set the unit to "REC" mode.
   Then, check the output value is as shown below:

Normal position tape (Type I): 19mV ±4mV
High position tape (Type II): 27mV ±5mV

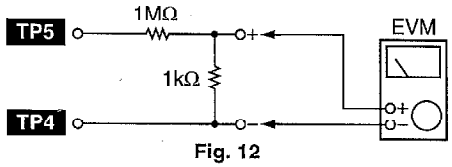


Fig. 12

ERASE VOLTAGE CHECK (DECK2)

1. Connect the measuring instrument as shown in Fig. 13.
2. Insert the normal position tape or high position tape into DECK2, and set the unit to "REC" mode.
   Then, check the output value is as shown below:

Normal position tape (Type I): more than 100mV
High position tape (Type II): more than 150mV

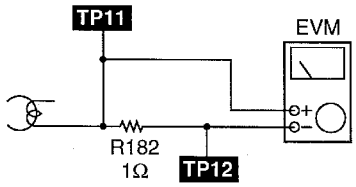


Fig. 13

Adjustment point

MECHANISM CONTROL P.C.B

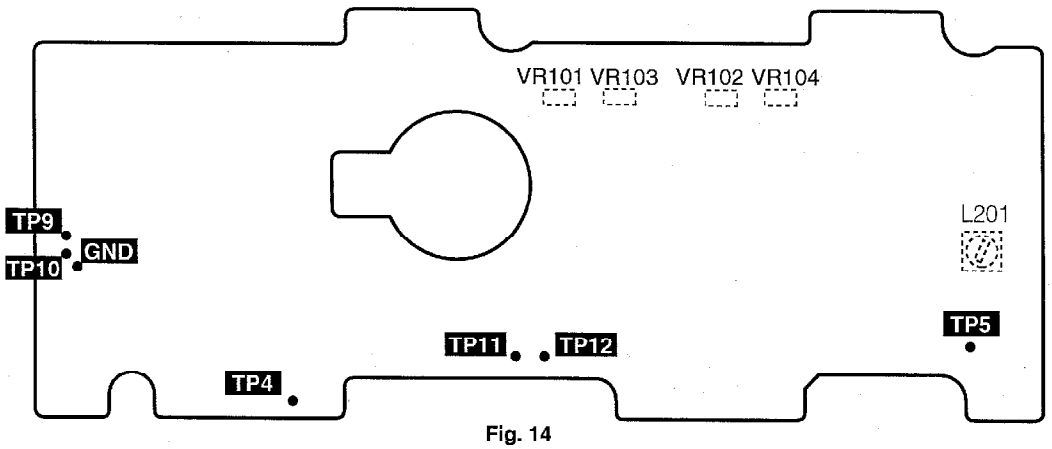
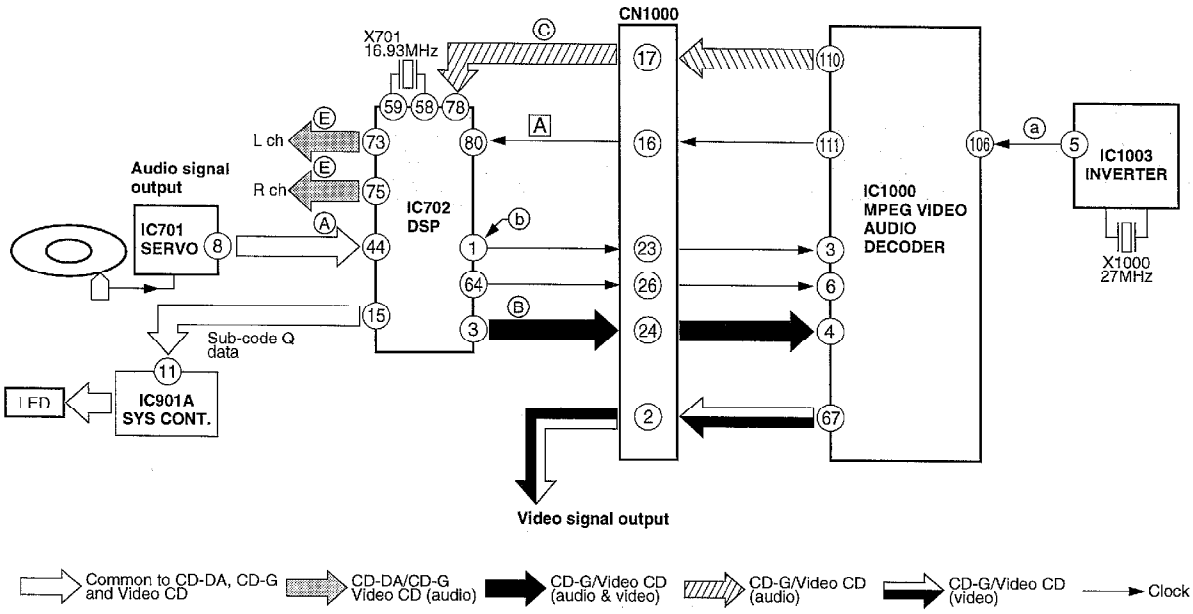


Fig. 14

■ Troubleshooting Guide for Video Circuit

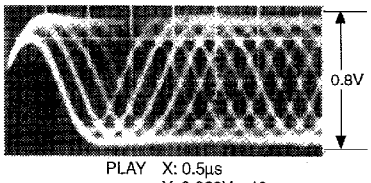
• **Circuit diagram**



DATA SIGNAL LINE WAVEFORMS

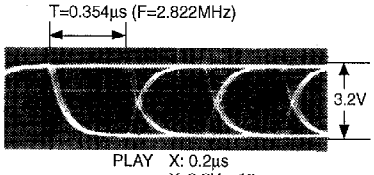
Note: Use the PVCD-K06 video CD test disc (menu playback feature is available on version 2.0). For color bar display, play back the 1st track when the menu playback feature is used, or the 3rd track when the feature is not used.

Ⓐ **IC702** ㊹ **RF** signal



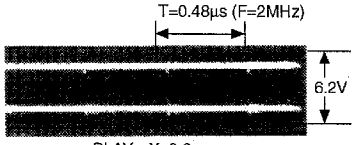
PLAY X: 0.5µs
Y: 0.023V × 10

Ⓑ **IC1000** ④ CD serial data input



PLAY X: 0.2µs
Y: 0.2V × 10

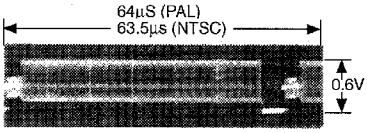
Ⓒ **IC1000** ⑩ Audio serial data output



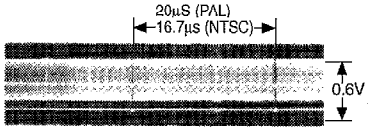
PLAY X: 0.2µs
Y: 0.2V × 10

Ⓓ **IC1000** ⑰ Video signal output
(blue back screen)

• H signal (PLAY, X: 10µs, Y: 0.1V × 10)

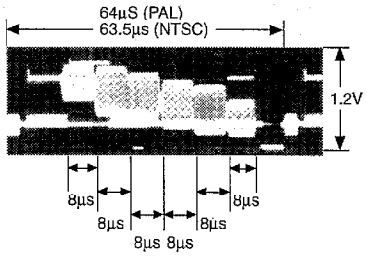


• V signal (PLAY, X: 5µs, Y: 0.1V × 10)

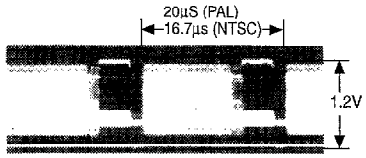


(color bar screen)

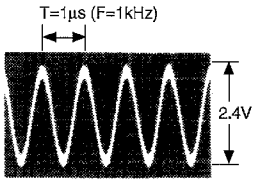
• H signal (PLAY, X: 10µs, Y: 0.1V × 10)



• V signal (PLAY, X: 10µs, Y: 0.1V × 10)

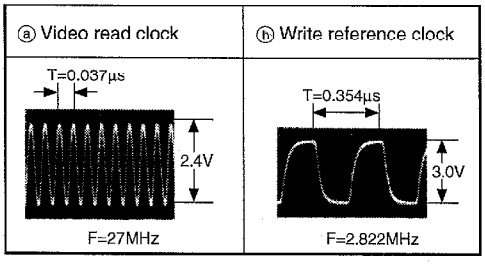


Ⓔ **IC702** ⑬, ⑮ Audio signal output

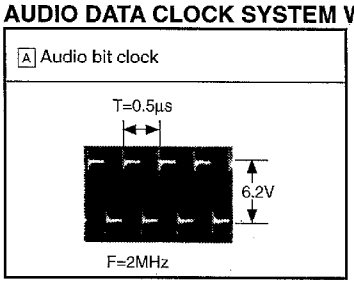


• Test disc played at 1kHz, 0dB
(1st track. SZZP1056C)
PLAY, X: 1µs
Y: 0.1V × 10

MASTER CLOCK SYSTEM WAVEFORM



AUDIO DATA CLOCK SYSTEM WAVEFORM

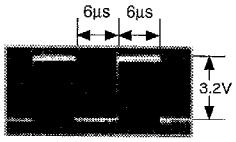
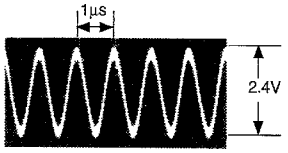


- **Diagnostic Procedures by Symptom**

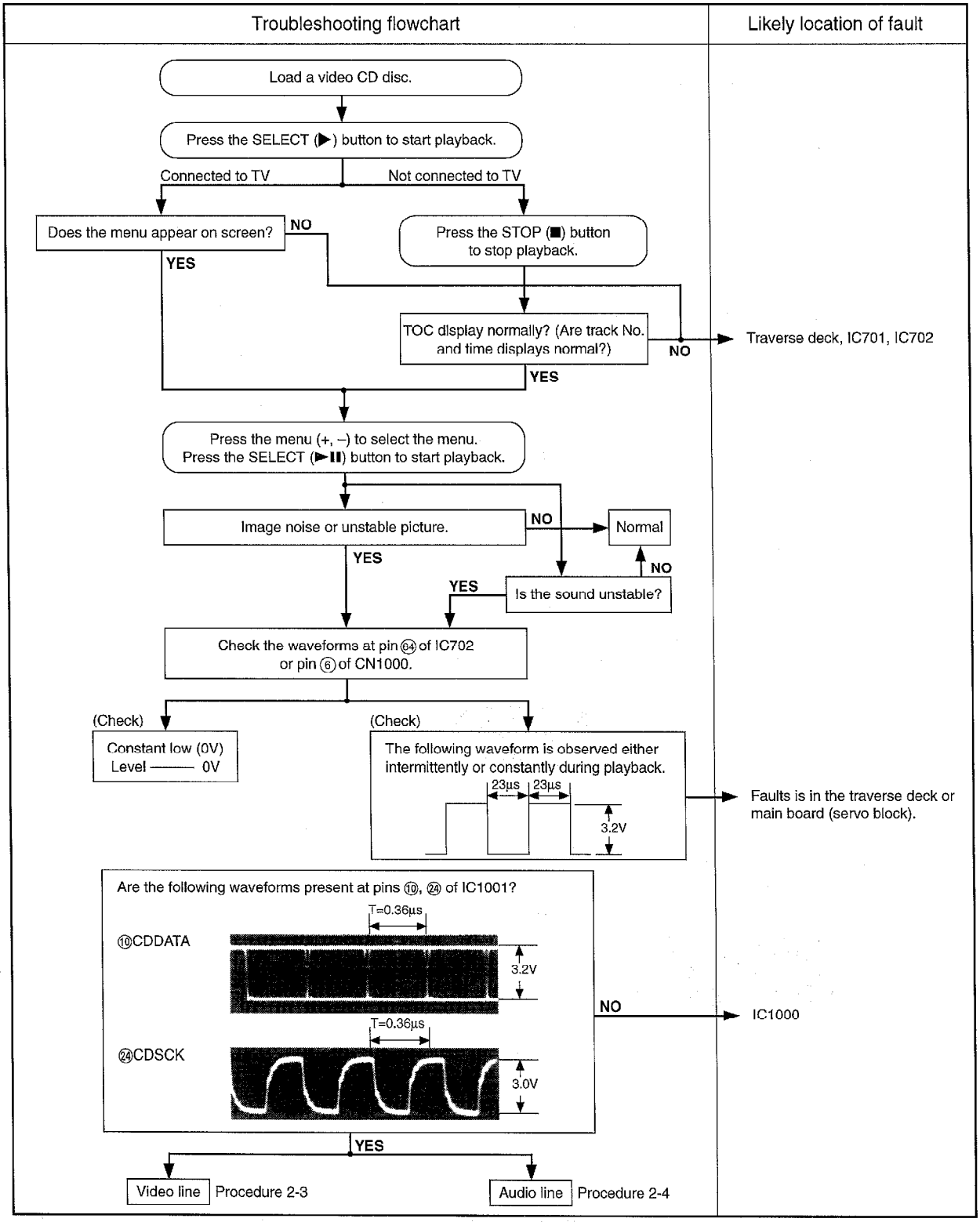
Symptom		Likely Location Fault
CD-DA	**Video-CD**	
TOC NG	TOC NG (both audio and video are NG.) Blue back display.	For TOC NG, fault in the CD-DA circuit. IC701, IC702, IC703, or traverse system.
Turntable fails to rotate.	Fails to rotate.	Traverse system, focus servo system (IC701, IC703), supply line, clock line system control.
Turntable rotates.	Rotates.	Traverse system, tracking servo system / CLV servo system/traverse servo system (IC701, IC702, IC703).
Audio normal	Audio normal, Video NG.	IC1000
Audio normal	No sound, Video NG.	IC1000
TOC OK, counter OK, but no sound.	TOC OK, counter OK, but no sound and video NG.	CD disc other than DV "Karaoke" soft, video CD and CD-DA.

Troubleshooting Procedure 1	CD-DA	No sound

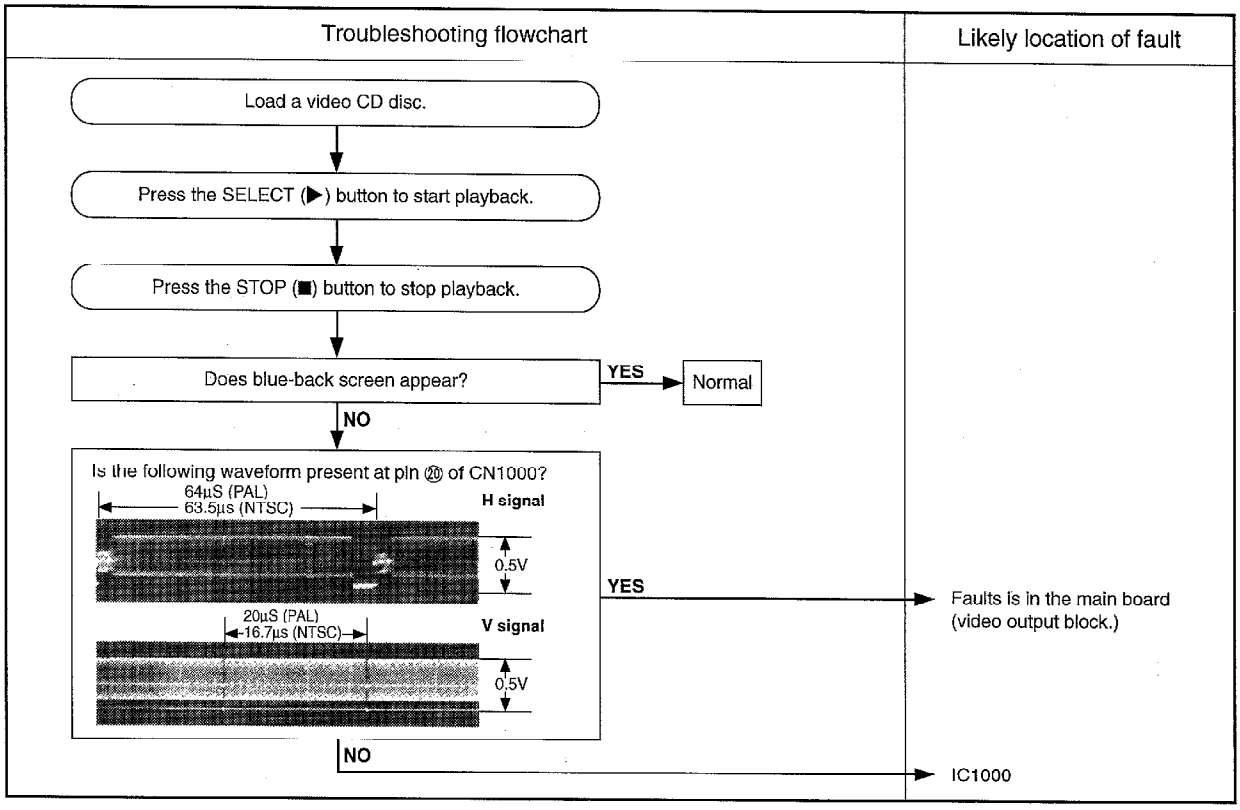
CD-DA: Compact disc digital audio (conventional CD only with audio tracks)

Troubleshooting flowchart	Likely location of fault
Load a CD-DA disc.	
Press the SELECT (▶) button to start playback.	
Press the STOP (■) button to stop playback.	
TOC display normal? (Are track No. and time displays normal?) NO	Traverse deck, IC701, IC702 [Refer to "Troubleshooting guide" on pages 112 and 113.]
YES	
Press the SELECT (▶) button to start playback.	
Does sound dropout occur? NO → Normal (go to procedure 2-1)	
YES	
Check pin ⑭ of IC702 or pin ⑥ of CN1000.	
(Check) Constant low (0V) Level —— 0V	
(Check) The following waveform is observed either intermittently or constantly during playback. IPFLAG 	Faults is in the traverse deck or main board (servo block).
Are the following waveforms present at pins ⑬ and ⑮ of IC702 when the 1kHz, 0dB portion of the 1st track on test disc SZZP1056C played back?  NO	IC702
YES	Main circuit

Troubleshooting Procedure 2-1	Video CD	No picture or No sound

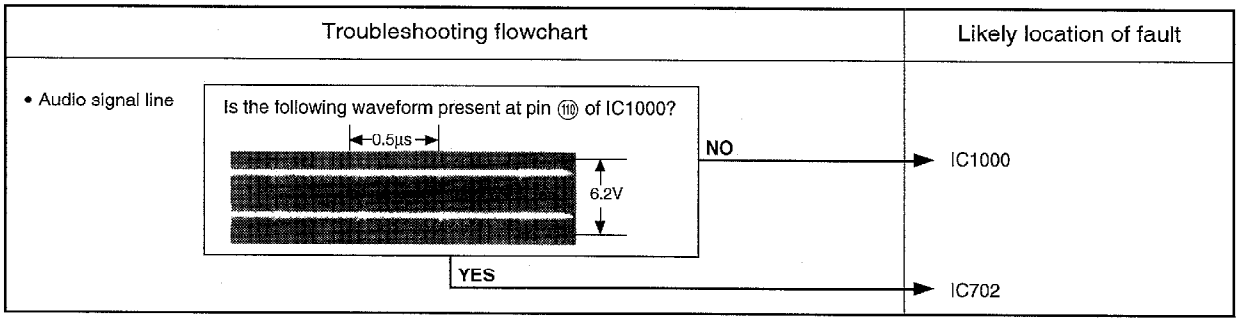


Troubleshooting Procedure 2-2	Video CD blue back	No blue back

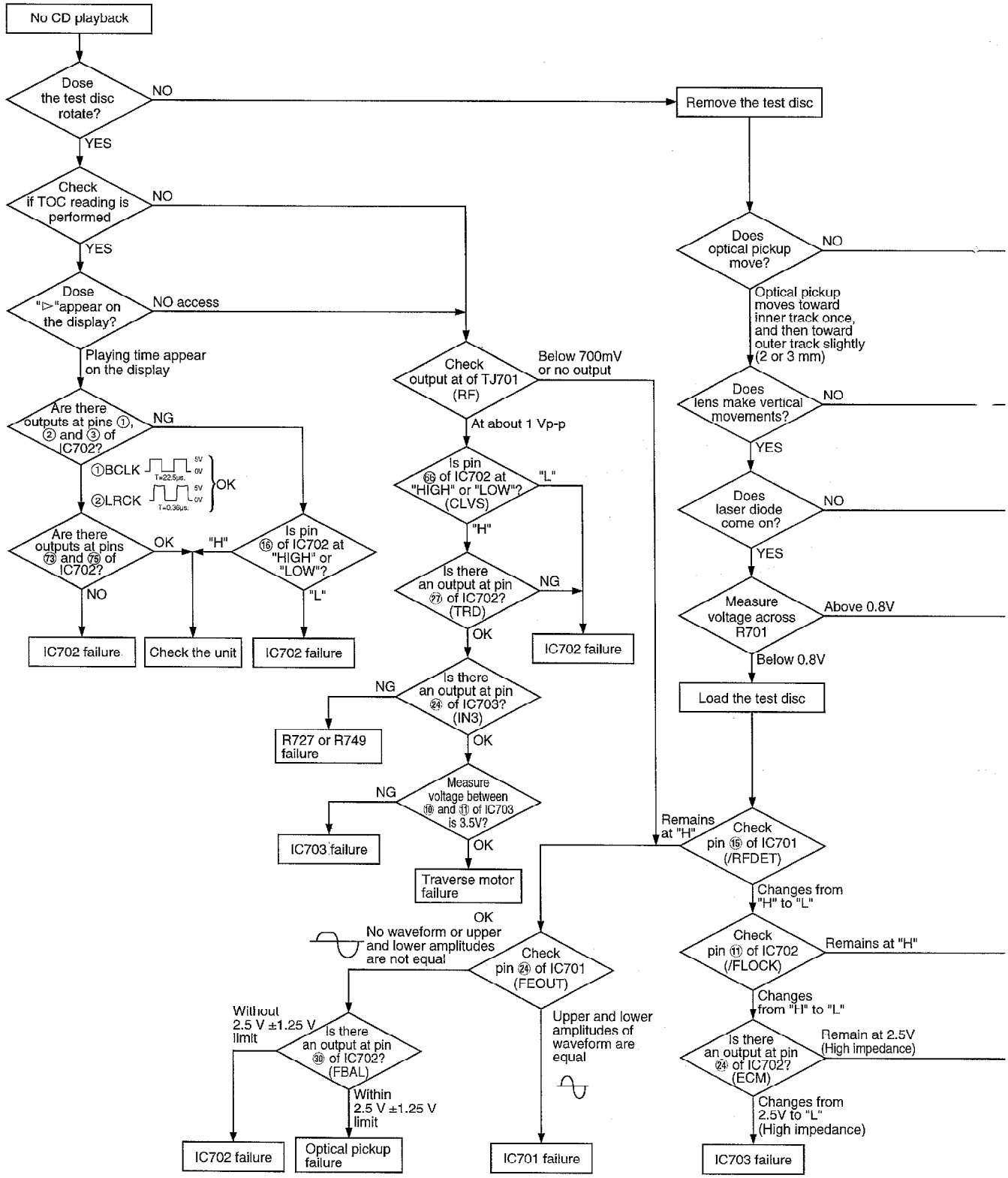


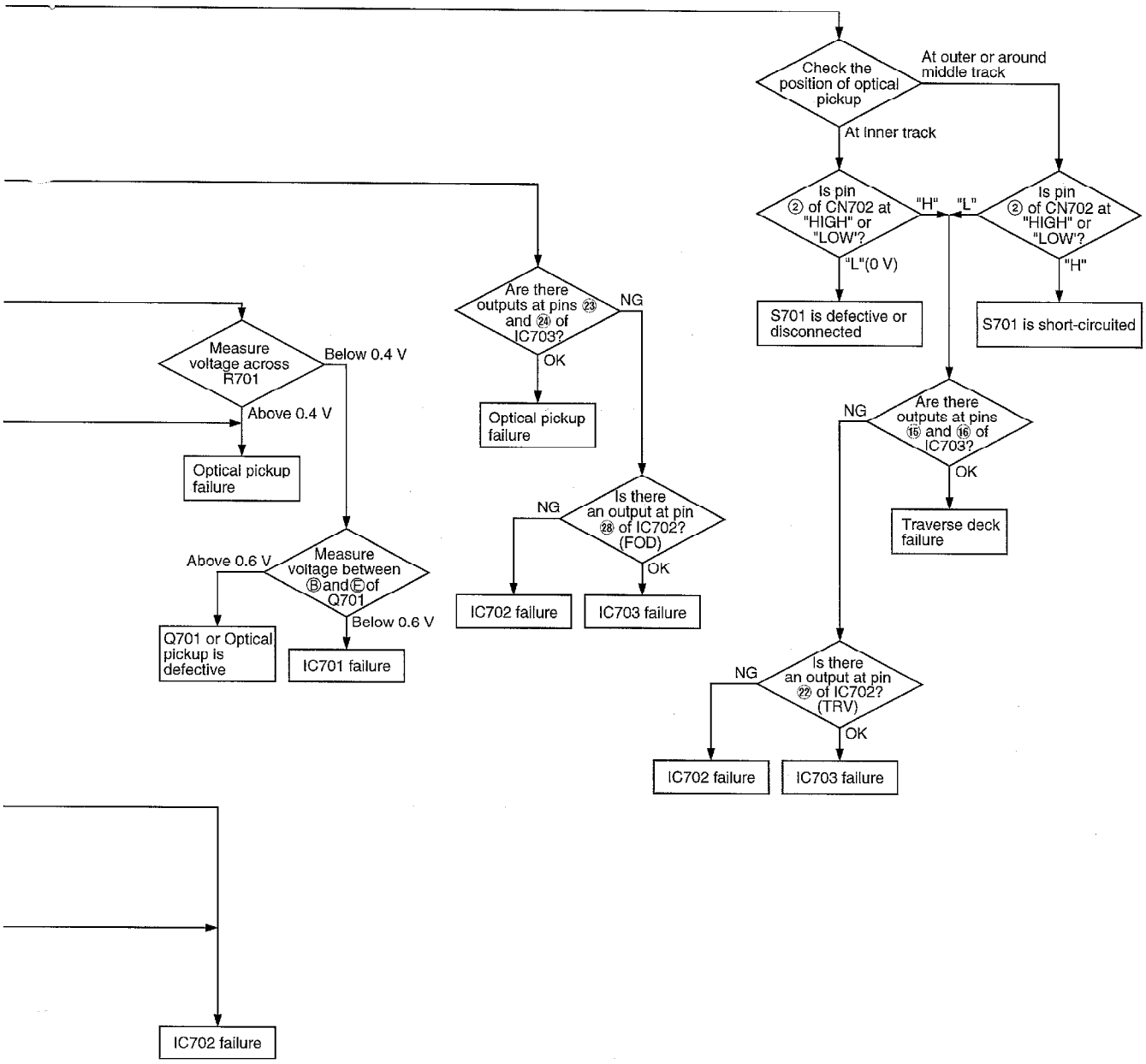
Troubleshooting Procedure 2-3	Video portion of video CD	No picture	---------- Likely location of fault: IC1000

Troubleshooting Procedure 2-4	Audio portion of video CD	No sound



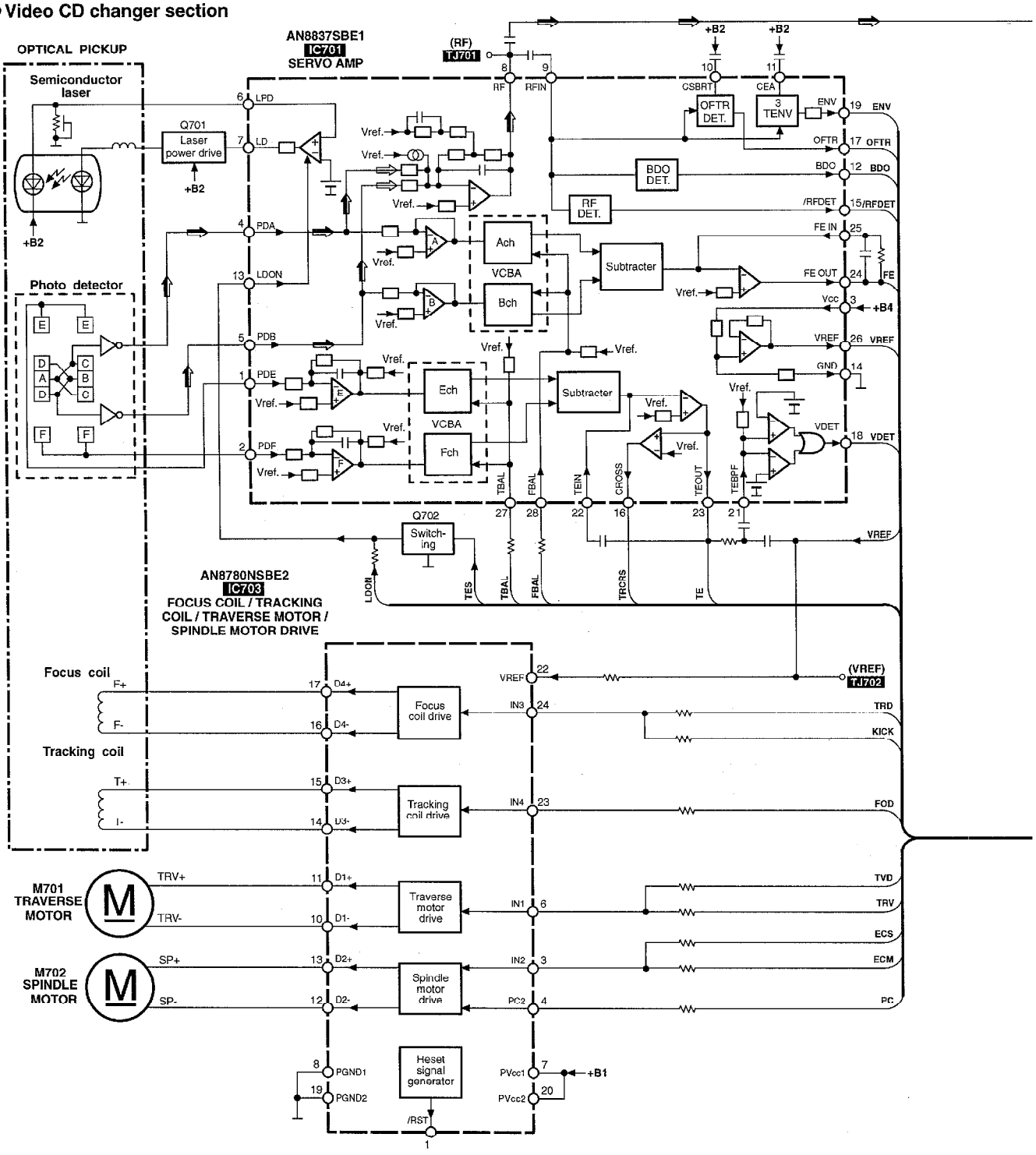
■ Troubleshooting Guide for CD Servo Circuit

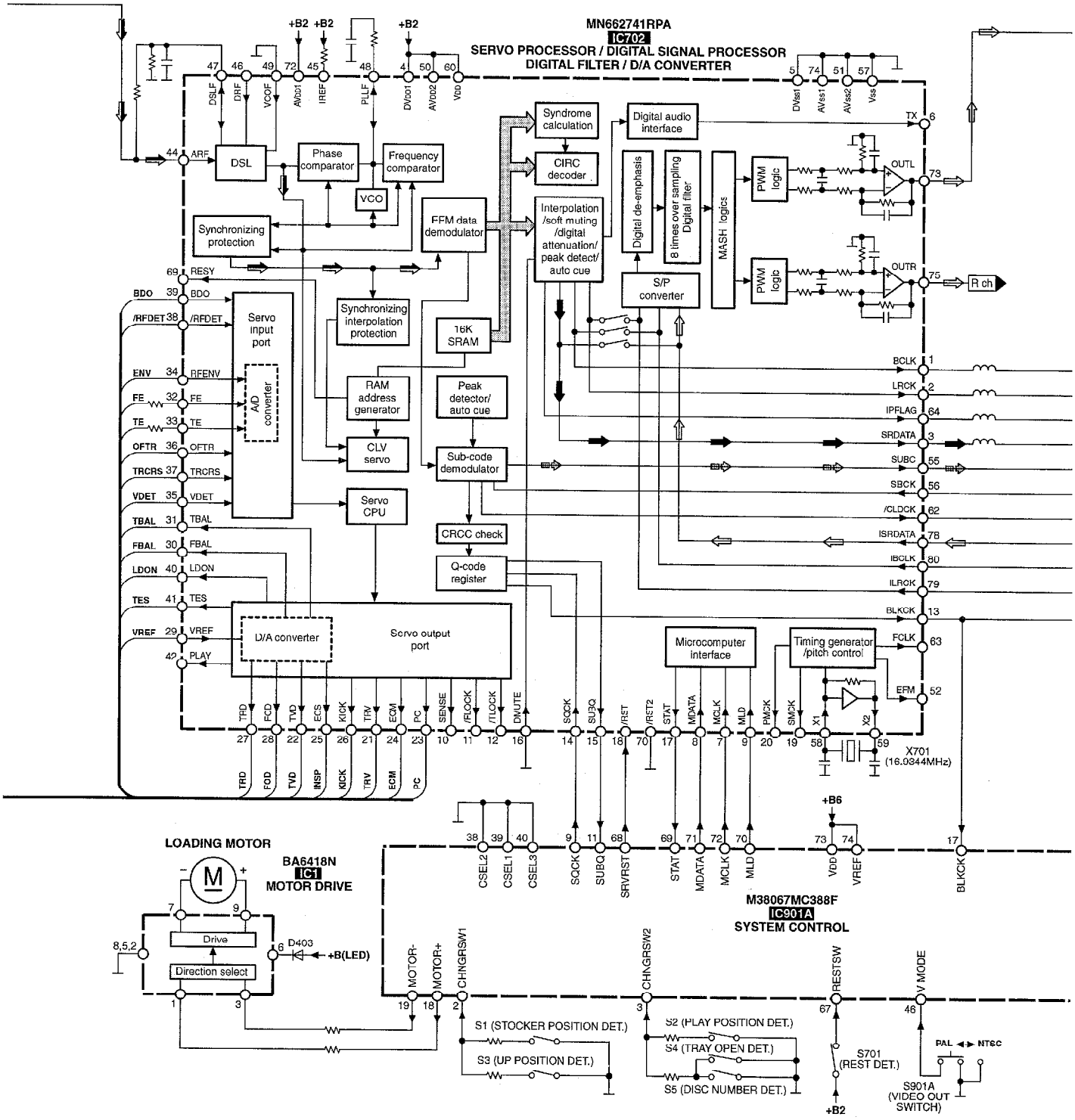

No CD playback
Dose the test disc rotate?
NO
YES
Remove the test disc
Check if TOC reading is performed
NO
YES
Dose "▷"appear on the display?
NO access
Playing time appear on the display
Does optical pickup move?
NO
Optical pickup moves toward inner track once, and then toward outer track slightly (2 or 3 mm)
Does lens make vertical movements?
NO
YES
Does laser diode come on?
NO
YES
Measure voltage across R701
Above 0.8V
Below 0.8V
Load the test disc
Check output at of TJ701 (RF)
Below 700mV or no output
At about 1 Vp-p
Are there outputs at pins ①, ② and ③ of IC702?
NG
①BCLK
②LRCK
OK
Are there outputs at pins ⑬ and ⑮ of IC702?
OK
"H"
Is pin ⑯ of IC702 at "HIGH" or "LOW"?
"L"
NO
IC702 failure
Check the unit
IC702 failure
Is pin ⑯ of IC702 at "HIGH" or "LOW"? (CLVS)
"L"
"H"
Is there an output at pin ㉗ of IC702? (TRD)
NG
OK
IC702 failure
Is there an output at pin ㉔ of IC703? (IN3)
NG
OK
R727 or R749 failure
Measure voltage between ⑩ and ⑪ of IC703 is 3.5V?
NG
OK
IC703 failure
Traverse motor failure
Remains at "H"
Check pin ⑮ of IC701 (/RFDET)
Changes from "H" to "L"
Check pin ⑪ of IC702 (/FLOCK)
Remains at "H"
Changes from "H" to "L"
Is there an output at pin ㉔ of IC702? (ECM)
Remain at 2.5V (High impedance)
Changes from 2.5V to "L" (High impedance)
IC703 failure
OK
No waveform or upper and lower amplitudes are not equal
Check pin ㉔ of IC701 (FEOUT)
Upper and lower amplitudes of waveform are equal
IC701 failure
Without 2.5 V ±1.25 V limit
Is there an output at pin ㉚ of IC702? (FBAL)
Within 2.5 V ±1.25 V limit
IC702 failure
Optical pickup failure

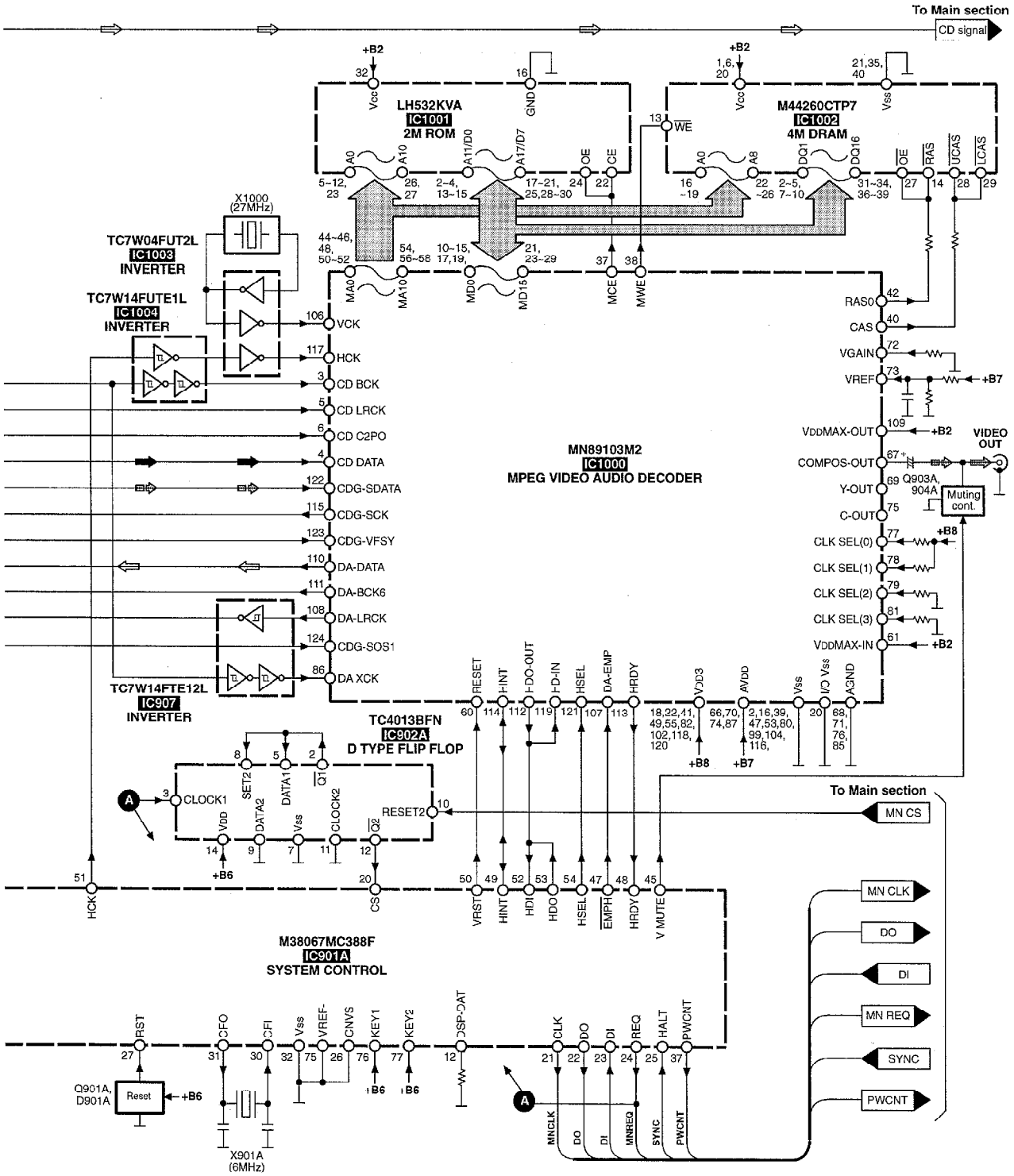

Check the position of optical pickup
At outer or around middle track
At inner track
Is pin ② of CN702 at "HIGH" or "LOW"?
"H"
"L"
Is pin ② of CN702 at "HIGH" or "LOW"?
"L"(0 V)
"H"
S701 is defective or disconnected
S701 is short-circuited
Are there outputs at pins ㉓ and ㉔ of IC703?
NG
OK
Optical pickup failure
Is there an output at pin ㉘ of IC702? (FOD)
NG
OK
IC702 failure
IC703 failure
Measure voltage across R701
Below 0.4 V
Above 0.4 V
Optical pickup failure
Measure voltage between Ⓑ and Ⓔ of Q701
Above 0.6 V
Below 0.6 V
Q701 or Optical pickup is defective
IC701 failure
Are there outputs at pins ⑮ and ⑯ of IC703?
NG
OK
Traverse deck failure
Is there an output at pin ㉒ of IC702? (TRV)
NG
OK
IC702 failure
IC703 failure
IC702 failure

■ Block Diagram

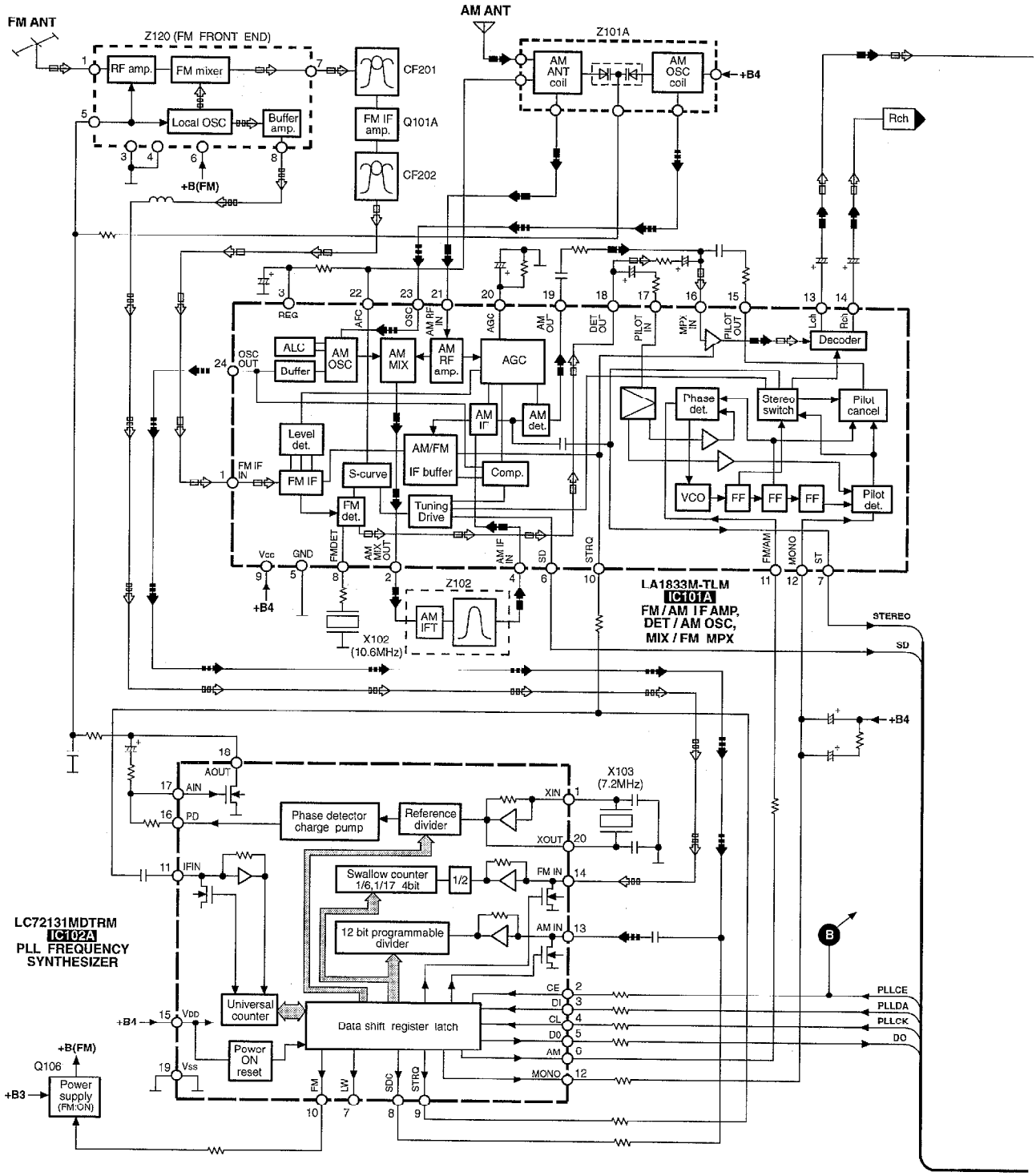
● Video CD changer section

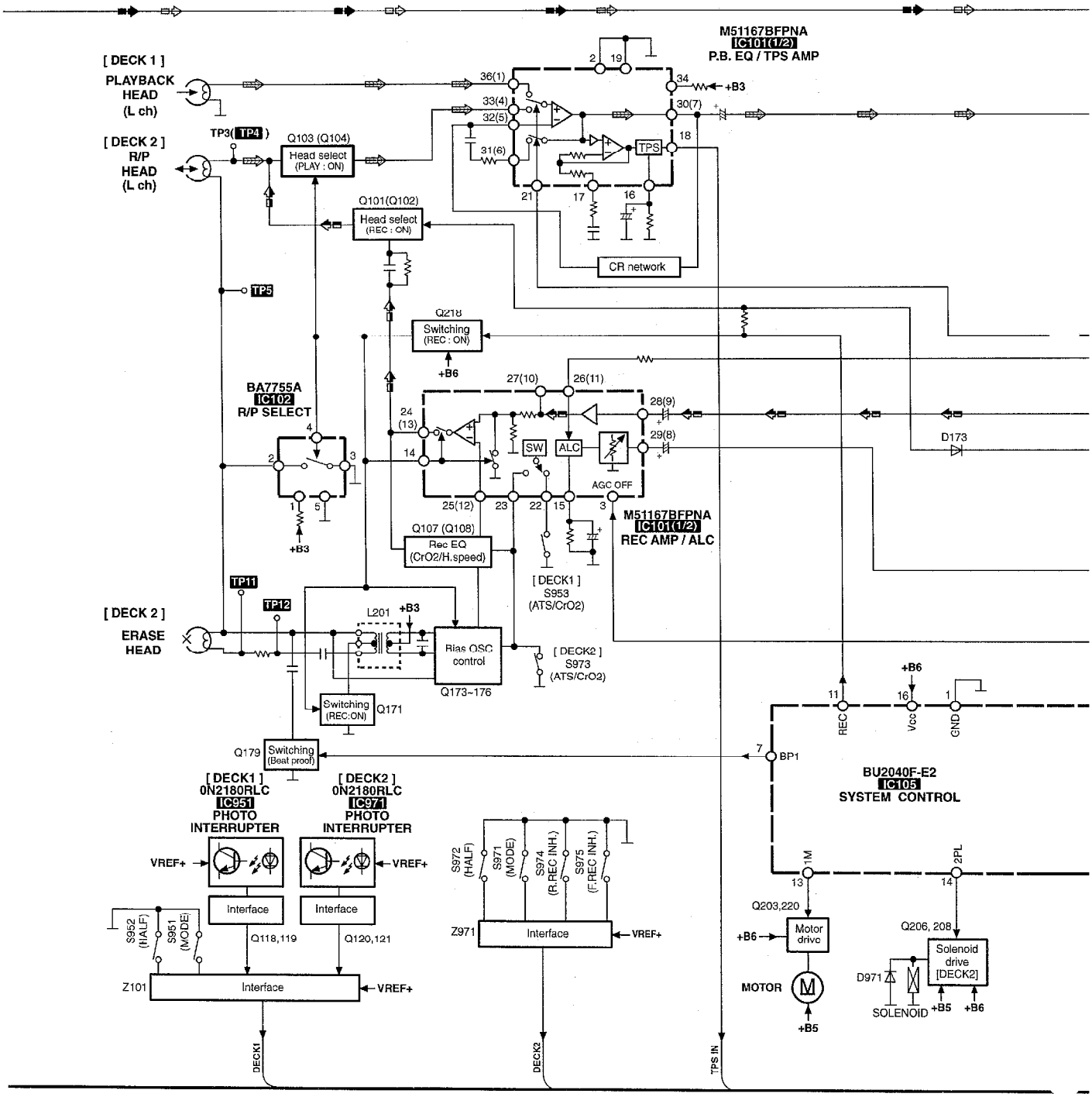


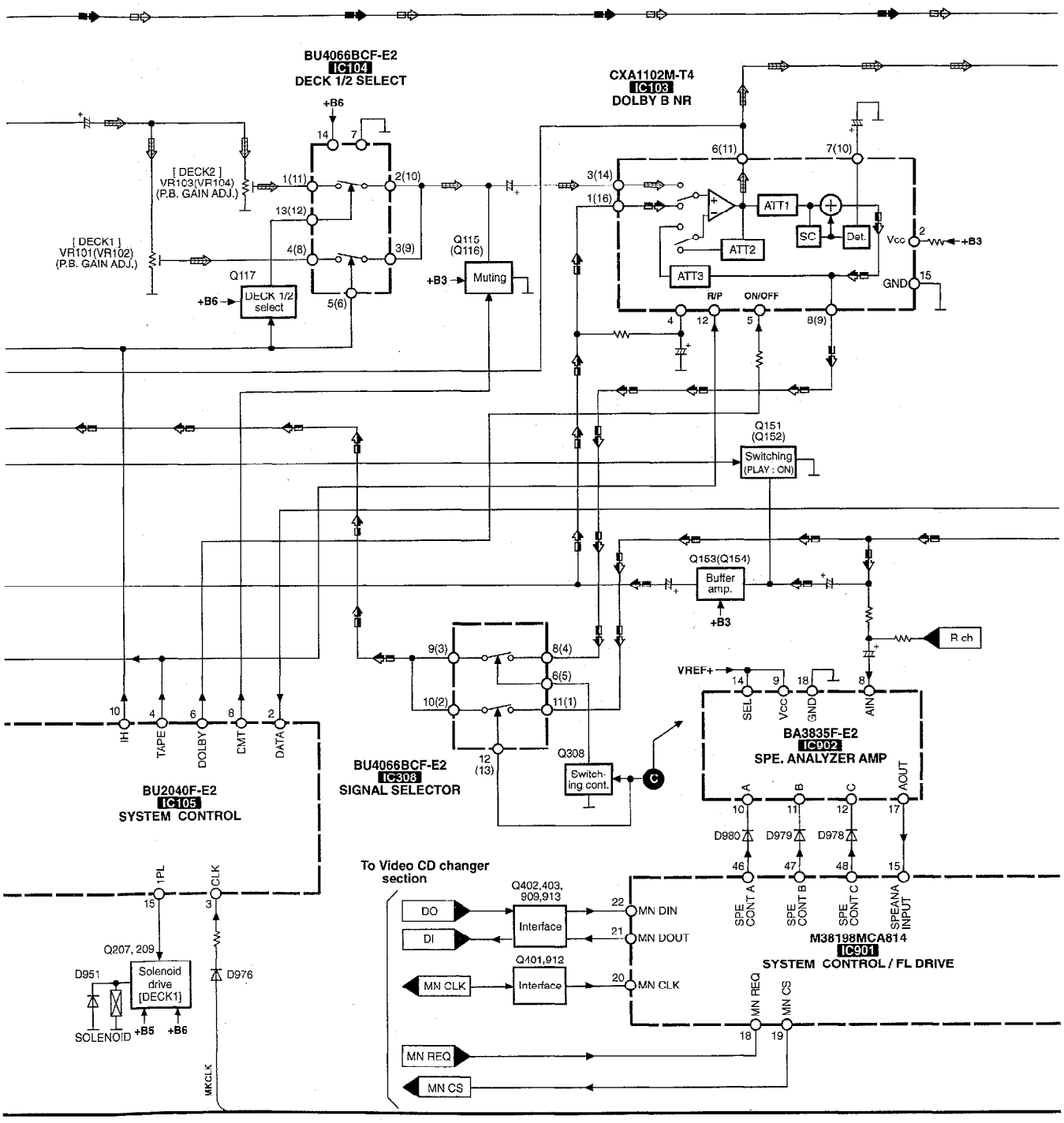

MN662741RPA
IC702
SERVO PROCESSOR / DIGITAL SIGNAL PROCESSOR
DIGITAL FILTER / D/A CONVERTER
+B2 +B2
+B2
DSLF
DRF
VCOF
AVdd1
IREF
PLLF
DVdd1
AVdd2
VDD
DVss1
AVss1
AVss2
VSS
ARF
DSL
Phase comparator
Frequency comparator
VCO
Synchronizing protection
EFM data demodulator
Syndrome calculation
CIRC decoder
Interpolation /soft muting /digital attenuation/ peak detect/ auto cue
Digital audio interface
Digital de-emphasis
8 times over sampling Digital filter
MASH logics
PWM logic
PWM logic
S/P converter
OUTL
OUTR
R ch
TX
RESY
BDO
/RFDET
Servo input port
A/D converter
ENV
RFENV
FE
TE
OFTR
TRCRS
VDET
TBAL
FBAL
LDON
TES
VREF
PLAY
Synchronizing interpolation protection
16K SRAM
RAM address generator
CLV servo
Servo CPU
Peak detector/ auto cue
Sub-code demodulator
CRCC check
Q-code register
D/A converter
Servo output port
BCLK
LRCK
IPFLAG
SRDATA
SUBC
SBCK
/CLDCK
ISRDATA
IBCLK
ILRCK
BLKCK
FCLK
EFM
Microcomputer interface
Timing generator /pitch control
X1
X2
X701
(16.9344MHz)
TRD
FOD
TVD
INSP
KICK
TRV
ECM
PC
SENSE
FLOCK
/TLOCK
DMUTE
SQCK
SUBQ
/RST
/RST2
STAT
MDATA
MCLK
MLD
PMCK
SMCK
+B6
CSEL2
CSEL1
CSEL3
SRVRST
LOADING MOTOR
BA6418N
IC1
MOTOR DRIVE
Drive
Direction select
D403
+B(LED)
MOTOR-
MOTOR+
CHNGRSW1
CHNGRSW2
RESTSW
V MODE
M38067MC388F
IC901A
SYSTEM CONTROL
S1 (STOCKER POSITION DET.)
S3 (UP POSITION DET.)
S2 (PLAY POSITION DET.)
S4 (TRAY OPEN DET.)
S5 (DISC NUMBER DET.)
S701
(REST DET.)
S901A
(VIDEO OUT SWITCH)
PAL ◄► NTSC

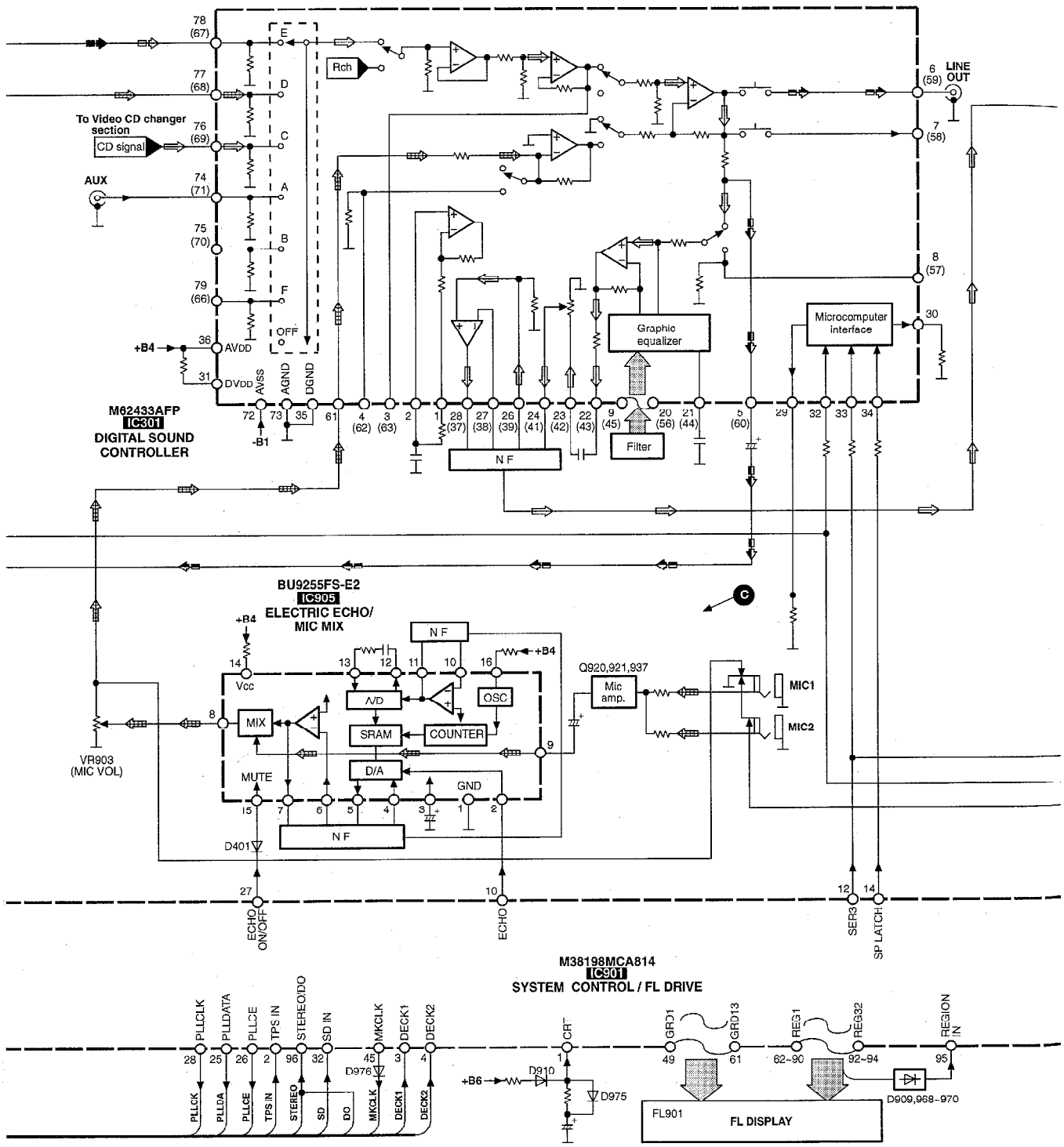

To Main section
CD signal
+B2
LH532KVA
IC1001
2M ROM
M44260CTP7
IC1002
4M DRAM
X1000
(27MHz)
TC7W04FUT2L
IC1003
INVERTER
TC7W14FUTE1L
IC1004
INVERTER
MN89103M2
IC1000
MPEG VIDEO AUDIO DECODER
VCK
HCK
CD BCK
CD LRCK
CD C2PO
CD DATA
CDG-SDATA
CDG-SCK
CDG-VFSY
DA-DATA
DA-BCK6
DA-LRCK
CDG-SOS1
DA XCK
RAS0
CAS
VGAIN
VREF
+B7
VDDMAX-OUT
VIDEO OUT
COMPOS-OUT
Y-OUT
C-OUT
Q903A, 904A
Muting cont.
CLK SEL(0)
CLK SEL(1)
CLK SEL(2)
CLK SEL(3)
VDDMAX-IN
+B8
TC7W14FTE12L
IC907
INVERTER
TC4013BFN
IC902A
D TYPE FLIP FLOP
To Main section
MN CS
MN CLK
DO
DI
MN REQ
SYNC
PWCNT
M38067MC388F
IC901A
SYSTEM CONTROL
Q901A, D901A
Reset
X901A
(6MHz)

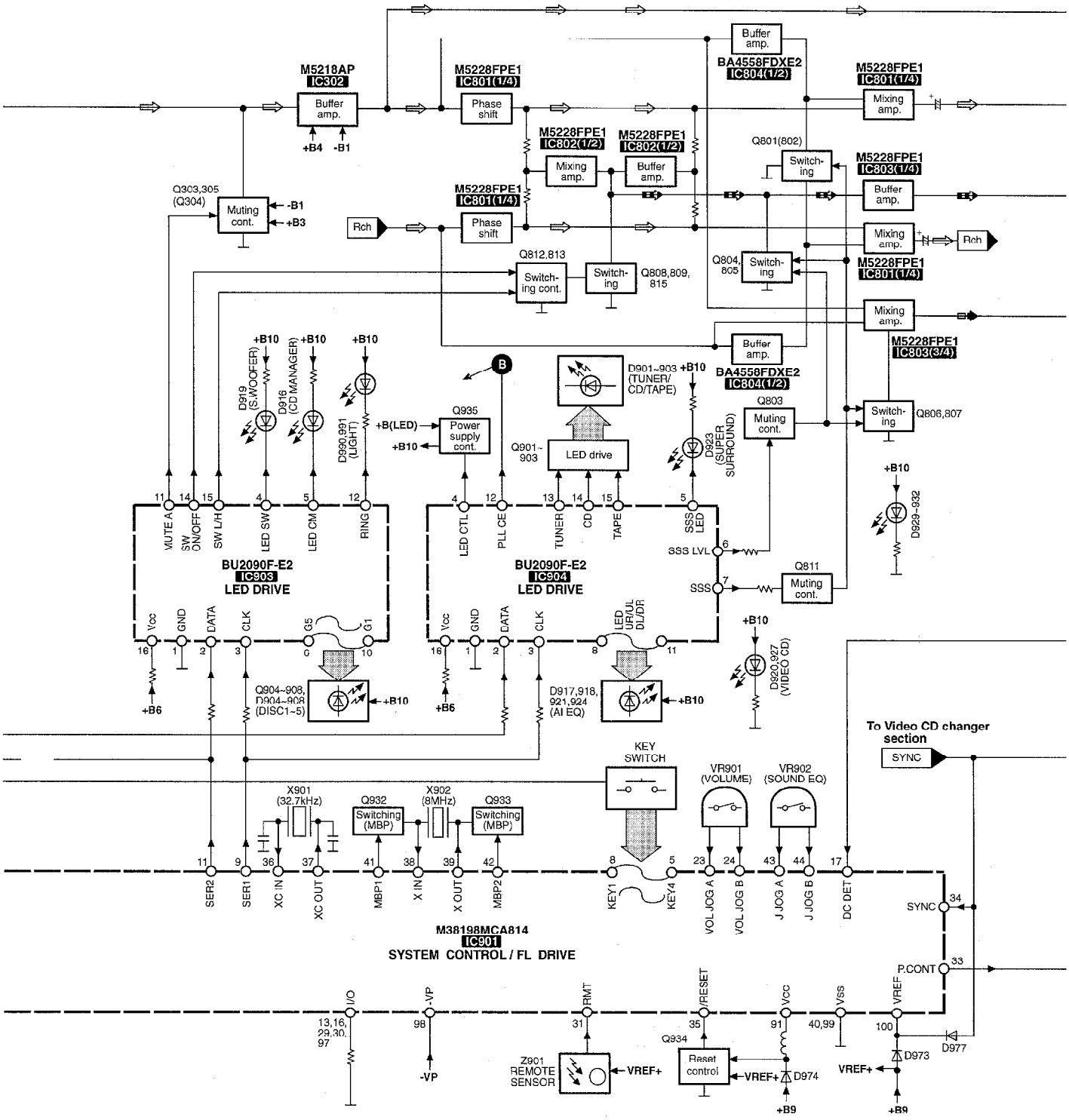
● Main section

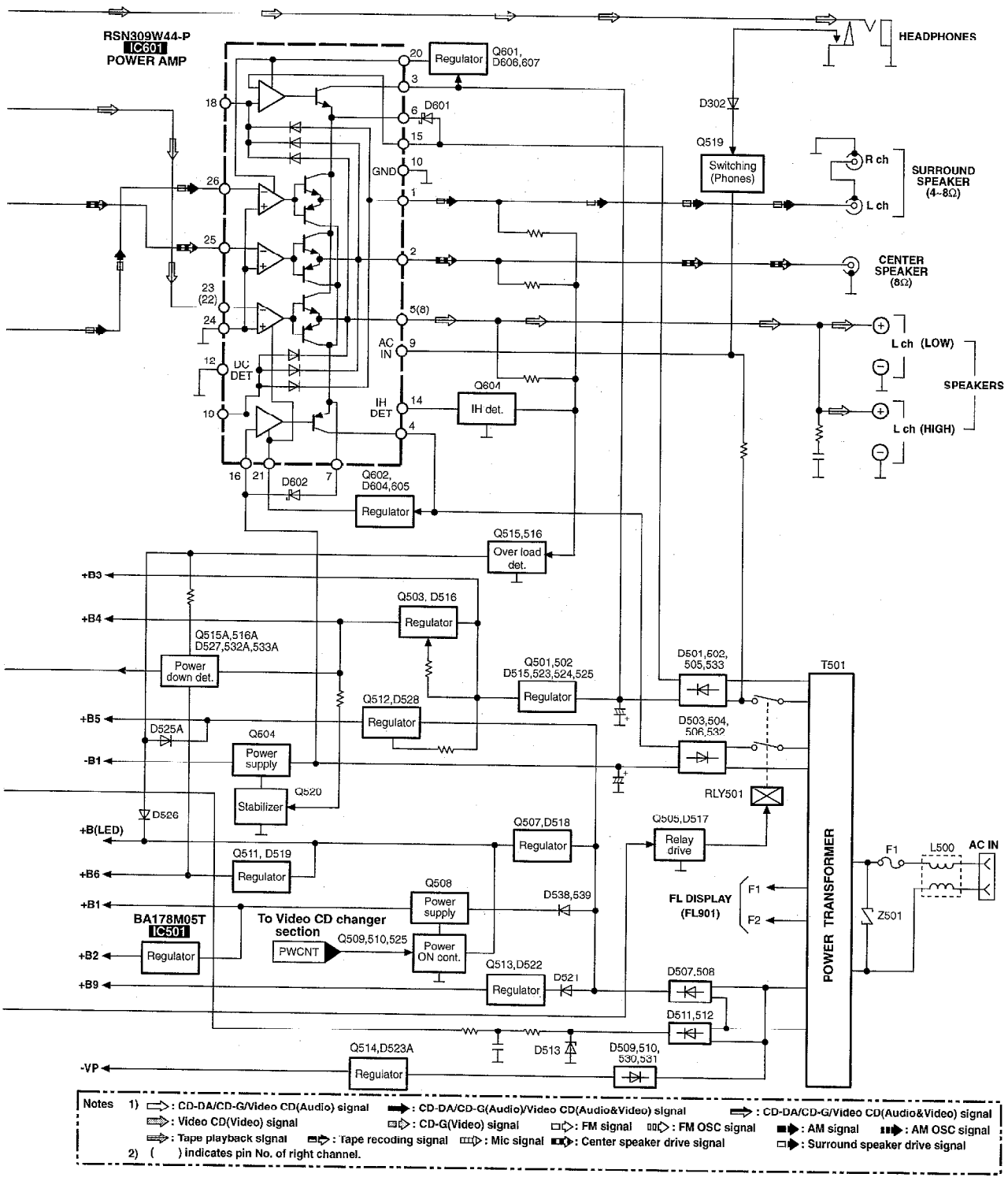



M51167BFPNA
IC101(1/2)
P.B. EQ / TPS AMP
[DECK 1]
PLAYBACK HEAD (L ch)
[DECK 2]
R/P HEAD (L ch)
TP3(TP4)
Q103 (Q104)
Head select (PLAY : ON)
Q101(Q102)
Head select (REC : ON)
TP5
Q218
Switching (REC : ON)
+B6
BA7755A
IC102
R/P SELECT
+B3
TPS
CR network
SW
ALC
AGC OFF
D173
M51167BFPNA
IC101(1/2)
REC AMP / ALC
Q107 (Q108)
Rec EQ (CrO2/H.speed)
[DECK1]
S953
(ATS/CrO2)
TP11
TP12
[DECK 2]
ERASE HEAD
L201
Bias OSC control
Q173~176
[DECK2]
S973
(ATS/CrO2)
Switching (REC:ON)
Q171
Q179
Switching (Beat proof)
[DECK1]
0N2180RLC
IC951
PHOTO INTERRUPTER
[DECK2]
0N2180RLC
IC971
PHOTO INTERRUPTER
VREF+
Interface
S952 (HALF)
S951 (MODE)
Q118,119
Q120,121
Z101
S972 (HALF)
S971 (MODE)
S974 (R.REC INH.)
S975 (F.REC INH.)
Z971
REC
Vcc
GND
BP1
BU2040F-E2
IC105
SYSTEM CONTROL
1M
2PL
Q203,220
Motor drive
MOTOR
Q206, 208
Solenoid drive [DECK2]
D971
SOLENOID
+B5
DECK1
DECK2
TPS IN

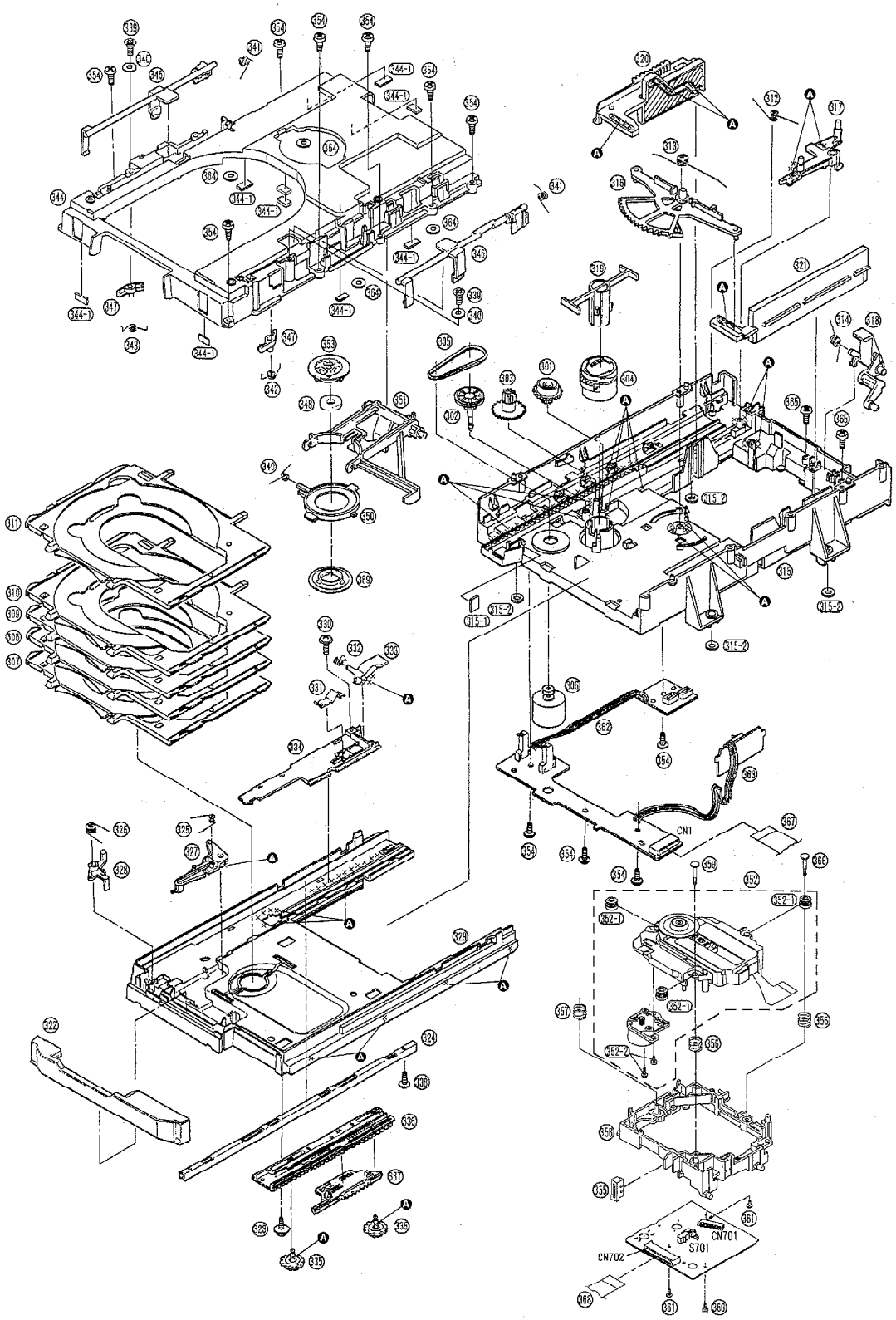

BU4066BCF-E2
IC104
DECK 1/2 SELECT
+B6
[DECK2]
VR103(VR104)
(P.B. GAIN ADJ.)
[DECK1]
VR101(VR102)
(P.B. GAIN ADJ.)
Q117
DECK 1/2 select
Q115
(Q116)
Muting
+B3
CXA1102M-T4
IC103
DOLBY B NR
ATT1
ATT2
ATT3
SC
Det.
Vcc
GND
R/P
ON/OFF
Q151
(Q152)
Switching
(PLAY : ON)
Q153(Q154)
Buffer amp.
R ch
VREF+
SEL
Vcc
GND
AIN
BA3835F-E2
IC902
SPE. ANALYZER AMP
AOUT
D980
D979
D978
SPE CONT A
SPE CONT B
SPE CONT C
SPEANA INPUT
BU4066BCF-E2
IC308
SIGNAL SELECTOR
Q308
Switching cont.
BU2040F-E2
IC105
SYSTEM CONTROL
IH
TAPE
DOLBY
CMT
DATA
To Video CD changer section
DO
DI
MN CLK
MN REQ
MN CS
Q402,403,
909,913
Q401,912
Interface
MN DIN
MN DOUT
M38198MCA814
IC901
SYSTEM CONTROL / FL DRIVE
Q207, 209
Solenoid drive [DECK1]
D951
D976
SOLENOID
+B5
+B6
MKCLK


To Video CD changer section
CD signal
AUX
Rch
LINE OUT
Graphic equalizer
Microcomputer interface
M62433AFP
IC301
DIGITAL SOUND CONTROLLER
AVDD
DVDD
AVSS
AGND
DGND
OFF
+B4
-B1
N F
Filter
BU9255FS-E2
IC905
ELECTRIC ECHO/ MIC MIX
Vcc
A/D
OSC
MIX
SRAM
COUNTER
D/A
MUTE
GND
Q920,921,937
Mic amp.
MIC1
MIC2
VR903 (MIC VOL)
D401
ECHO ON/OFF
ECHO
SER3
SP LATCH
M38198MCA814
IC901
SYSTEM CONTROL / FL DRIVE
PLLCLK
PLLDATA
PLLCE
TPS IN
STEREO/DO
SD IN
MKCLK
DECK1
DECK2
CRT
D910
D975
D976
+B6
GRD1
GRD13
REG1
REG32
REGION IN
FL901
FL DISPLAY
D909,968-970

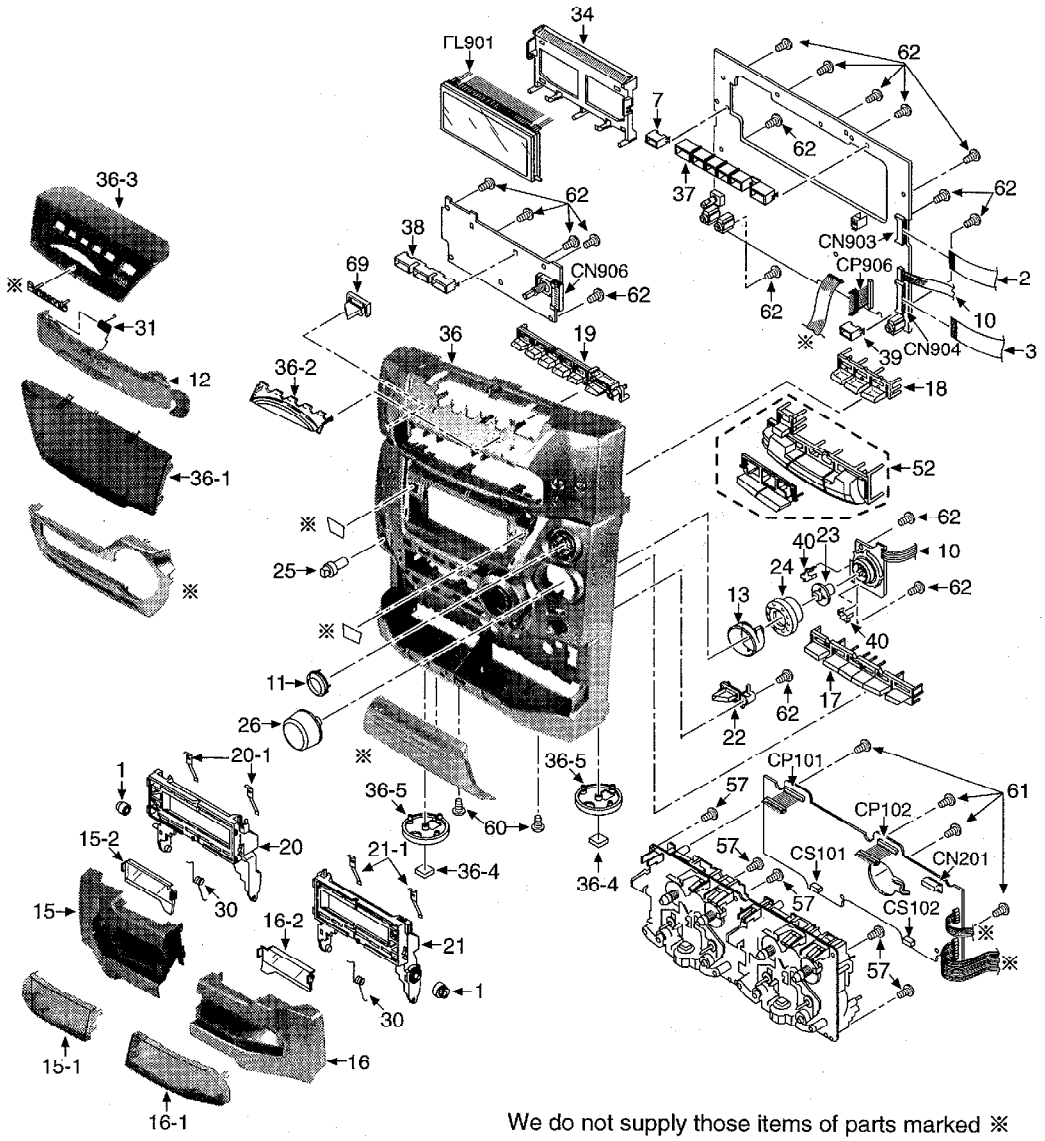

M5218AP
IC302
Buffer amp.
+B4 -B1
M5228FPE1
IC801(1/4)
Phase shift
M5228FPE1
IC802(1/2)
Mixing amp.
Buffer amp.
BA4558FDXE2
IC804(1/2)
M5228FPE1
IC801(1/4)
Mixing amp.
Q801(802)
Switch-ing
M5228FPE1
IC803(1/4)
Buffer amp.
Mixing amp.
Rch
Q303,305 (Q304)
Muting cont.
-B1
+B3
Q812,813
Switch-ing cont.
Switch-ing
Q808,809, 815
Q804, 805
M5228FPE1
IC801(1/4)
M5228FPE1
IC803(3/4)
Switch-ing
Q806,807
Q803
Muting cont.
Q811
Muting cont.
+B10
D919 (S.WOOFER)
D916 (CD MANAGER)
D990,991 (LIGHT)
+B(LED)
Q935
Power supply cont.
D901~903 (TUNER/ CD/TAPE)
Q901~ 903
LED drive
D923 (SUPER SURROUND)
D929~932
MUTE A
SW ON/OFF
SW L/H
LED SW
LED CM
RING
BU2090F-E2
IC903
LED DRIVE
LED CTL
PLL CE
TUNER
CD
TAPE
SSS LED
SSS LVL
SSS
BU2090F-E2
IC904
LED DRIVE
Vcc
GND
DATA
CLK
G5
G1
LED UR/UL DL/DR
+B6
Q904~908, D904~908 (DISC1~5)
D917,918, 921,924 (AI EQ)
D920,927 (VIDEO CD)
To Video CD changer section
SYNC
KEY SWITCH
VR901 (VOLUME)
VR902 (SOUND EQ)
X901 (32.7kHz)
Q932 Switching (MBP)
X902 (8MHz)
Q933 Switching (MBP)
SER2
SER1
XC IN
XC OUT
MBP1
X IN
X OUT
MBP2
KEY1
KEY4
VOL JOG A
VOL JOG B
J JOG A
J JOG B
DC DET
SYNC
M38198MCA814
IC901
SYSTEM CONTROL / FL DRIVE
P.CONT
I/O
-VP
RMT
Z901 REMOTE SENSOR
VREF+
/RESET
Q934
Reset control
Vcc
VSS
VREF
D974
D973
D977
+B9


RSN309W44-P
IC601
POWER AMP
Regulator
Q601, D606,607
D601
GND
AC IN
DC DET
IH DET
Q604
IH det.
D602
Q602, D604,605
Regulator
Q515,516
Over load det.
HEADPHONES
D302
Q519
Switching (Phones)
R ch
L ch
SURROUND SPEAKER (4~8Ω)
CENTER SPEAKER (8Ω)
L ch (LOW)
L ch (HIGH)
SPEAKERS
+B3
+B4
Q515A,516A D527,532A,533A
Power down det.
Q503, D516
Regulator
Q501,502 D515,523,524,525
Regulator
Q512,D528
Regulator
D501,502, 505,533
D503,504, 506,532
T501
+B5
D525A
Q604
Power supply
-B1
Q520
Stabilizer
RLY501
D526
+B(LED)
Q507,D518
Regulator
Q505,D517
Relay drive
Q511, D519
Regulator
+B6
+B1
Q508
Power supply
D538,539
FL DISPLAY (FL901)
F1
F2
BA178M05T
IC501
To Video CD changer section
PWCNT
Q509,510,525
Power ON cont.
+B2
Regulator
Q513,D522
Regulator
D521
+B9
D507,508
D511,512
POWER TRANSFORMER
F1
L500
AC IN
Z501
-VP
Q514,D523A
Regulator
D513
D509,510, 530,531
Notes 1) : CD-DA/CD-G/Video CD(Audio) signal
: CD-DA/CD-G(Audio)/Video CD(Audio&Video) signal
: CD-DA/CD-G/Video CD(Audio&Video) signal
: Video CD(Video) signal
: CD-G(Video) signal
: FM signal
: FM OSC signal
: AM signal
: AM OSC signal
: Tape playback signal
: Tape recoding signal
: Mic signal
: Center speaker drive signal
: Surround speaker drive signal
2) ( ) indicates pin No. of right channel.

■ Loading Unit Parts Location



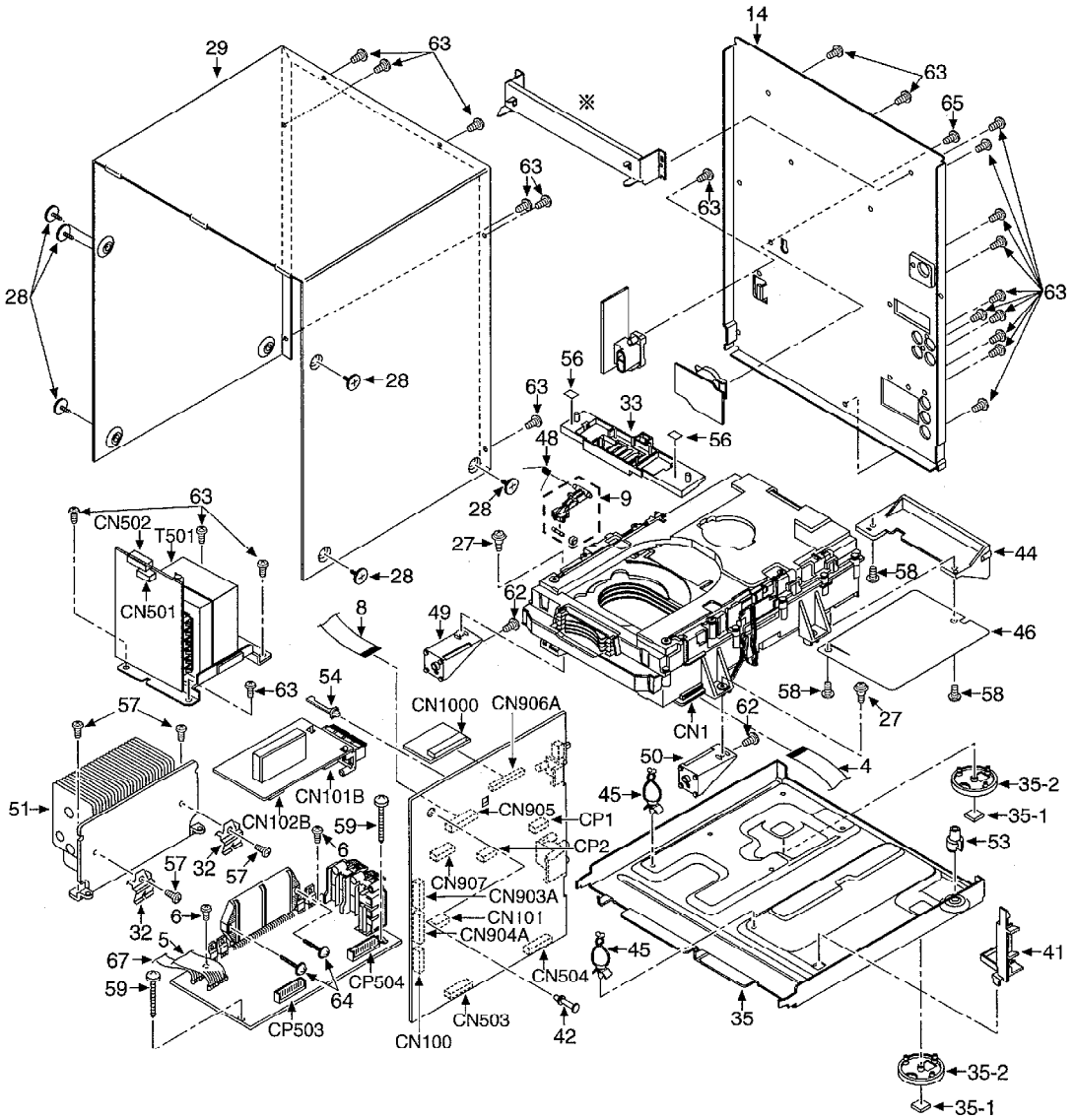
■ Cabinet Parts Location



We do not supply those items of parts marked ※

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
1	RDG0129	DAMPER GEAR	2	
2	REE0833	FFC(20P)	1	
3	REE0834	FFC(23P)	1	
4	REEX0025	FFC(14P)	1	
5	REX0912	FLAT CABLE(9P)	1	
6	XTB3+10J	SCREW	2	
7	RMN0496	LED HOLDER (DPL)	1	
8	REEX0046	30P FFC PANEL TO C	1	
9	RFKNACH34PK	HOLDER ARM ASS'Y	1	
10	REXX0190	WIRE ASS'Y(DP)	1	
11	RGK0963-Q	AI EQ CAP	1	
12	RGK0979B-S	CHANGER LID	1	
13	RGL0382-Q	JOG RING LIGHTING CHIP	1	
14	RGRX0011B-A	REAR PANEL	1	GK
14	RGRX0011B-B	REAR PANEL	1	GH
14	RGRX0011C-A	REAR PANEL	1	GC
15	RFKLAAK45GAS	CASS LID (L) ASS'Y	1	
15-1	RKW0528-Q	CASSETTE WINDOW(L)	1	
15-2	RGL0384-Q	CASS. L. PIE.(L)	1	
16	RFKLAAK45PBS	CASS LID (R) ASS'Y	1	

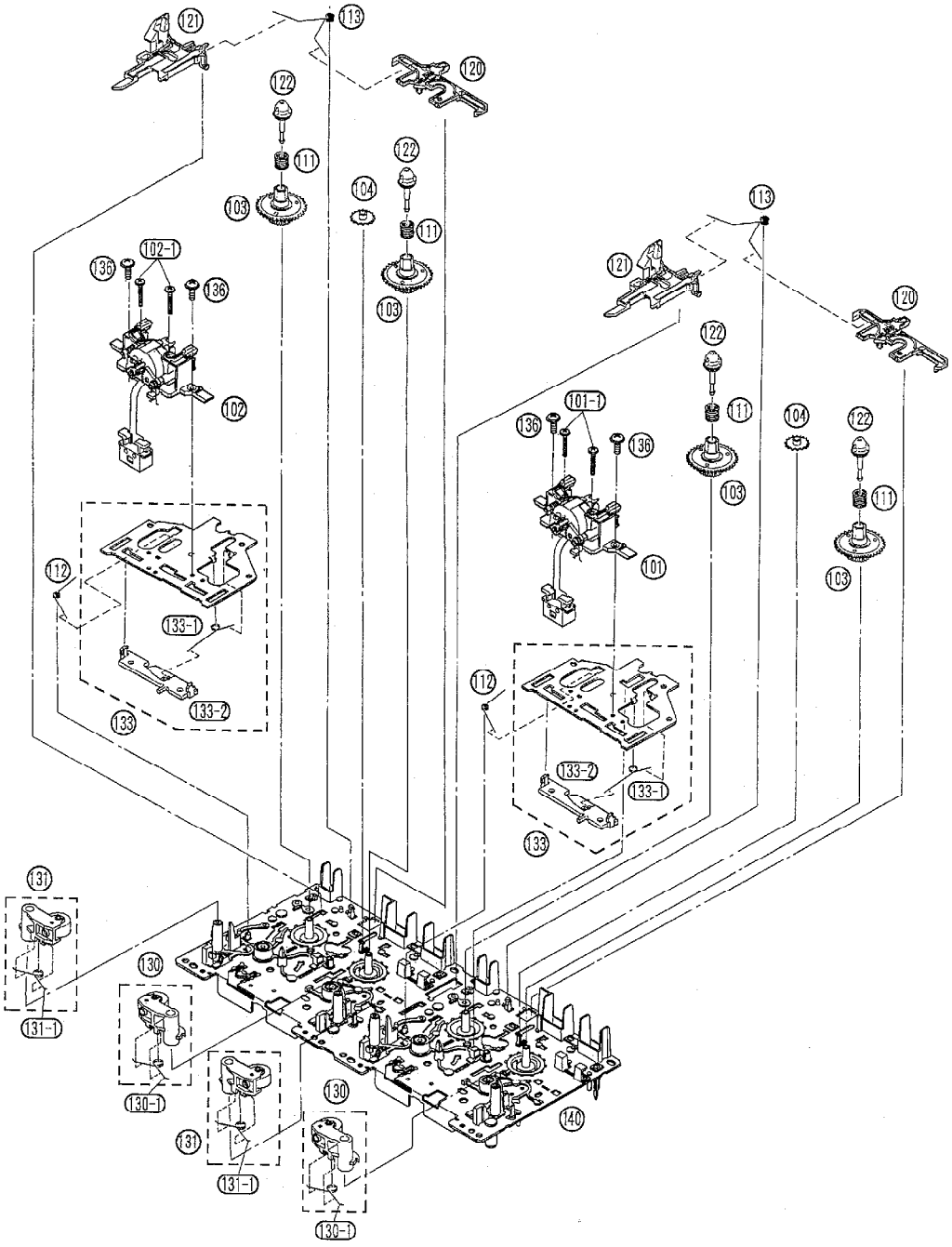
Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
16-1	RKW0529A-Q	CASSETTE WINDOW(R)	1	
16-2	RGL0385-Q	CASS. L. PIE.(R)	1	
17	RGU1588A-1S	DECK BUTTON	1	
18	RGU1589-Q	FUNCTION BUTTON	1	
19	RGU1592-Q	DISC SELECT BUTTON	1	
20	RFKLACH330AK	CASS.HOLDER ASS'Y(L)	1	
20-1	RUS757ZAA	CASS.HALF SPRING	2	
21	RFKLACH330BK	CASS.HOLDER ASS'Y(R)	1	
21-1	RUS757ZAA	CASS.HALF SPRING	2	
22	RGU1594-Q	SUPER WOOFER BUTTON	1	
23	RGW0274-S	JOY STICK KNOB	1	
24	RGW0275-S	JOG KNOB	1	
25	RGWX0026-S	MIC KNOB	1	
26	RGWX0027-S	VOLUME KNOB	1	
27	RHD30048	SCREW	2	
28	RHD30076-K	SCREW	6	
29	RKM0371A-S	TOP CABINET	1	
30	RMB0446	CASSETTE OPEN SPRING	2	
31	RMB0564-1	CD OPEN SPRING	1	
32	RMC0158-S	TR FIXTURE	2	

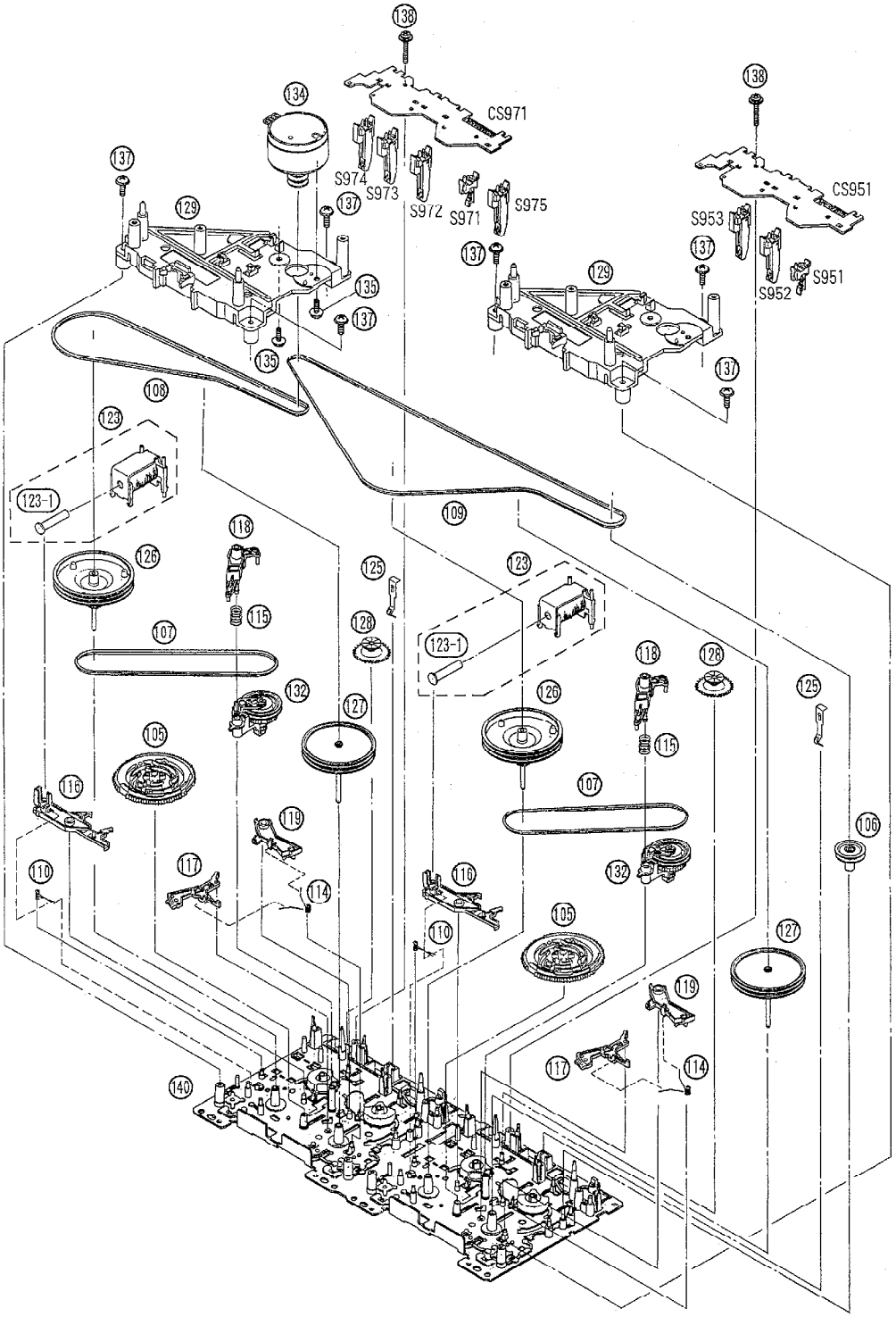


Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
33	RMN0350	8 LED HOLDER	1	
34	RMN0454	FL HOLDER	1	
35	RFKJAAK85GKS	BOTTOM CHASSIS ASS'Y	1	
35-1	RKA0059-K	LEG RUBBER	2	
35-2	RKAX0004-K	SET LEG (R)	2	
36	RFKGAAK85GKS	FRONT PANEL ASS'Y	1	
36-1	RKW0527-V	FL WINDOW	1	
36-2	RGL0383-Q	CD LIGHTING CHIP	1	
36-3	RGK0959E-K1	CHANGER TOP CABINET	1	
36-4	RKA0059-K	LEG RUBBER	2	
36-5	RKAX0003-N	SET LEG (F)	2	
37	RMN0456	LED HOLDER(CD)	1	
38	RMN0457	LED HOLDER(AMP)	1	
39	RMN0458	LED HOLDER2(AMP)	1	
40	RMN0482	LED HOLDER(POSITION	2	
41	RMNX0017-X	MAIN PCB HOLDER	1	
42	RMNX0019	PCB SPACER	1	
44	RMR1171-X	CD MECHA SUPPORT	1	
45	RMRX0026-W	WIRE CLAMPER	2	
46	RMV0150	HEAT PROTECT SHEET	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
48	RME0221	HOLDER ARM SPRING	1	
49	RMR1159-X	MECHA HOLDER'L'	1	
50	RMR1160-X	MECHA HOLDER'R'	1	
51	RXXX0014	HEAT SINK	1	
52	RYQ0234B-S	CONTROL BUTTON ASS'Y	1	
53	SHE187-4	SPACER (TRANS)	1	
54	RMR1093 W	P.C.B SPACER	1	
56	RMGX0020-K	RUBBER SPACER	2	
57	XTB3+10JFZ	SCREW	9	
58	XTB3+12J	SCREW	3	
59	XTB3+20J1	SCREW	2	
60	XTB3+8JFZ	SCREW (BLACK)	2	
61	XTBS26+10J	SCREW	4	
62	XTBS26+12J	SCREW	19	
63	XTBS3+8JFZ1	SCREW	23	
64	XTW3+15T	SCREW	2	
65	XYN3+C6FZ	SCREW	1	GC GH
67	REX0893	5P WIRE WITH CONN	1	
69	RGU1648-Q	DPL BUTTON	1	

■ Mechanism Parts Location




138
CS971
134
S974
S973
S972
S971
S975
137
129
135
108
123
123-1
109
118
126
125
115
128
107
132
127
105
116
119
117
110
114
140
CS951
S953
S952
S951
106

■ Replacement Parts List

Notes: * Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.
Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.
When replacing any of components, be sure to use only manufacture's specified parts shown in the parts list.
* The indications in the Remarks columns specify the areas. (Refer to the cover page for area.)
* All parts are supplied by MESA.

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
1	RDG0129	DAMPER GEAR	2	
2	REE0833	FFC(20P)	1	
3	REE0834	FFC(23P)	1	
4	REEX0025	FFC(14P)	1	
5	REX0912	FLAT CABLE(9P)	1	
6	XTB3+10J	SCREW	2	
7	RMN0496	LED HOLDER (DPL)	1	
8	REEX0046	30P FFC PANEL TO C	1	
9	RFKNACH34PK	HOLDER ARM ASS'Y	1	
10	REXX0190	WIRE ASS'Y(RP)	1	
11	RGK0963-Q	A1 EQ CAP	1	
12	RGK0979R-S	CHANGER LID	1	
13	RGL0382-Q	JOG RING LIGHTING CHIP	1	
14	RGRX0011B-A	REAR PANEL	1	GK
14	RGRX0011B-B	REAR PANEL	1	GH
14	RGRX0011C-A	REAR PANEL	1	GC
15	RFKLAAK45GAS	CASS LID (L) ASS'Y	1	
15-1	RKW0528-Q	CASSETTE WINDOW(L)	1	
15-2	RGL0384-Q	CASS. L. PIE. (L)	1	
16	RFKLAAK45PBS	CASS LID (R) ASS'Y	1	
16-1	RKW0529A-Q	CASSETTE WINDOW(R)	1	
16-2	RGL0385-Q	CASS. L. PIE. (R)	1	
17	RGU1588A-1S	DECK BUTTON	1	
18	RGU1589-Q	FUNCTION BUTTON	1	
19	RGU1592-Q	DISC SELECT BUTTON	1	
20	RFKLACH330AK	CASS. HOLDER ASS'Y(L)	1	
20-1	RUS757ZAA	CASS. HALF SPRING	2	
21	RFKLACH330BK	CASS. HOLDER ASS'Y(R)	1	
21-1	RUS757ZAA	CASS. HALF SPRING	2	
22	RGU1594-Q	SUPER WOOFER BUTTON	1	
23	RGW0274-S	JOY STICK KNOB	1	
24	RGW0275-S	JOG KNOB	1	
25	RGWX0026-S	MIC KNOB	1	
26	RGWX0027-S	VOLUME KNOB	1	
27	RHD30048	SCREW	2	
28	RHD30076-K	SCREW	6	
29	RKM0371A-S	TOP CABINET	1	
30	RMB0446	CASSETTE OPEN SPRING	2	
31	RMB0564-1	CD OPEN SPRING	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
32	RMC0158-S	TR FIXTURE	2	
33	RMN0350	8 LED HOLDER	1	
34	RMN0454	FL HOLDER	1	
35	RFKJAAK85GKS	BOTTOM CHASSIS ASS'Y	1	
35-1	RKA0059-K	LEG RUBBER	2	
35-2	RKAX0004-K	SET LEG (R)	2	
36	RFKGAAK85GKS	FRONT PANEL ASS'Y	1	
36-1	RKW0527-V	FL WINDOW	1	
36-2	RGL0383-Q	CD LIGHTING CHIP	1	
36-3	RGK0959E-K1	CHANGER TOP CABINET	1	
36-4	RKA0059-K	LEG RUBBER	2	
36-5	RKAX0003-N	SET LEG (F)	2	
37	RMN0456	LED HOLDER(CD)	1	
38	RMN0457	LED HOLDER(AMP)	1	
39	RMN0458	LED HOLDER2(AMP)	1	
40	RMN0482	LED HOLDER(POSITION	2	
41	RMNX0017-X	MAIN PCB HOLDER	1	
42	RMNX0019	PCB SPACER	1	
44	RMR1171-X	CD MECHA SUPPORT	1	
45	RMRX0026-W	WIRE CLAMPER	2	
46	RMV0150	HEAT PROTECT SHEET	1	
48	RME0221	HOLDER ARM SPRING	1	
49	RMR1159-X	MECHA HOLDER'L'	1	
50	RMR1160-X	MECHA HOLDER'R'	1	
51	RXXX0014	HEAT SINK	1	
52	RYQ0234B-S	CONTROL BUTTON ASS'Y	1	
53	SHE187-4	SPACER (TRANS)	1	
54	RMR1093 W	P. C. B SPACER	1	
56	RMGX0020-K	RUBBER SPACER	2	
57	XTB3+10JFZ	SCREW	9	
58	XTB3+12J	SCREW	3	
59	XTB3+20J1	SCREW	2	
60	XTB3+8JFZ	SCREW (BLACK)	2	
61	XTBS26+10J	SCREW	4	
62	XTBS26+12J	SCREW	19	
63	XTBS3+8JFZ1	SCREW	23	
64	XTW3+15T	SCREW	2	
65	XYN3+C6FZ	SCREW	1	GC GH
67	REX0893	5P WIRE WITH CONN	1	
69	RGU1648-Q	DPL BUTTON	1	
101	RED0037	R/P HEAD BLOCK ASS'Y	1	
101-1	RHE5152ZB	SCREW	1	
102	RED0038	P/B HEAD BLOCK ASS'Y	1	
102-1	RHE5152ZB	SCREW	2	
103	RDG0300	REEL TABLE BASE	4	
104	RDG0301	WINDING RELAY GEAR	2	
105	RDK0026	MAIN GEAR	2	
106	RDR0029	RELAY PULLY	1	
107	RDV0033-1	WINDING BELT	2	
108	RDV0034	CAPSTAN BELT 'A'	1	
109	RDV0057	CAPSTAN BELT 'B'	1	
110	RUW147ZA	SPRING	1	
111	RMB0400	REEL TABLE SPRING	4	
112	RMB0403	HEAD PANEL SPRING	2	
113	RMB0404	BRAKE ROD SPRING	2	
114	RMB0406	FR LEVER SPRING	2	
115	RMB0408	THRUST SPRING	2	
116	RML0370	TRIGGER LEVER	2	
117	RML0371	FR LEVER	2	
118	RML0372	WINDING LEVER	2	
119	RML0374	EJECT LEVER	2	
120	RMM0131	BRAKE ROD	2	
121	RMM0133	EJECT ROD	2	
122	RMQ0519	REEL TABLE HEAD	4	
123	RXQ0470	PLUNGER	2	
123-1	RMS0398-1	SHAFT	1	
125	RUS609ZC	SPRING	1	
126	RXF0049	FLY WHEEL ASS'Y	1	
127	RXF0050	FLY WHEEL ASS'Y	1	
128	RXG0040	FF RELAY GEAR ASS'Y	1	
129	RMK0283	SUB-CHASSIS	1	
130	RXL0124	PINCH ROLLER ASS'Y	1	
130-1	RMB0401	PINCH ARM SPRING 'F'	1	
131	RXL0125	PINCH ROLLER ASS'Y	1	
131-1	RMB0402	PINCH ARM SPRING 'R'	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
132	RXL0126	WINDING ARM ASS'Y	1	
133	RXQ0412	HEAD PANEL ASS'Y	1	
133-1	RMB0406	F.R ROD SPRING	1	
133-2	RMM0132	FR ROD	1	
134	REM0070	CAP MOTOR ASS'Y	1	
135	RHD26022	MOTOR SCREW	1	
136	XTW2+5L	SCREW	1	
137	XTW26+10S	SCREW	1	
138	XYC2+JF17	SCREW	1	
139	RFKJXED70-K	CHASSIS ASS'Y	1	
301	RDG0309	RELAY GEAR	1	
302	RDG0310	PULLEY GEAR	1	
303	RDG0311	DRIVE GEAR	1	
304	RDG0313	UP/DOWN GEAR LEVER	1	
305	RDV0036	BELT	1	
306	RFKPDS790PK1	MOTOR ASS'Y	1	
307	RGQ0170-K	TRAY 1	1	
308	RGQ0171-K	TRAY 2	1	
309	RGQ0172-K	TRAY 3	1	
310	RGQ0173-K	TRAY 4	1	
311	RGQ0174-K	TRAY 5	1	
312	RME0170	LOCK LEVER SPRING	1	
313	RME0179	ASSIST SPRING	1	
314	RME0180	TRAY HOLDER SPRING	1	
315	RFKNACH430GC	MECHA BASE ASS'Y	1	
315-1	RMF0221	FELT	1	
315-2	RMG0402-K	RUBBER WASHER	1	
316	RML0379	CHANGE LEVER	1	
317	RML0380	LOCK LEVER	1	
318	RML0383	TRAY HOLDING LEVER	1	
319	RML0385	UP/DOWN LEVER	1	
320	RMM0139	SLIDE PLATE LEVER(1)	1	
321	RMM0141	SLIDE PLATE LEVER(2)	1	
322	RGQ0175-K	TRAY ORNAMENT	1	
323	RHD20010	SCREW DRIVE RACK	1	
324	RMA0868	SUPPORT ANGLE	1	
325	RME0171	BASE LOCK LEVER SP	1	
326	RME0172	CARRIER LOCK LEVERS	1	
327	RML0377	BASE LOCK LEVER	1	
328	RML0378	CARRIER LOCK LEVER	1	
329	RMR0884-K	TRAY BASE	1	
330	RHD20009-1	SCREW	1	
331	RMG0274	TRAY HOOK SPRING	1	
332	RME0173	CARRIER ARM SPRING	1	
333	RML0376-1	CARRIER ARM	1	
334	RMM0137	CARRIER LEVER	1	
335	RDG0312	SPEEDUP GEAR	1	
336	RMM0134	DRIVE GEAR	1	
337	RMM0135	CUSHION RACK	1	
338	XTN2+6F	SCREW SUPPORT ANGLE	1	
339	XTS3+8J	SCREW	1	
340	XWE4E10	CUSHION	1	
341	RME0178	HOLDING SPRING	1	
342	RME0181	UP PREVENTION SP(R)	1	
343	RME0182	UP PREVENTION SP (L)	1	
344	RFKNACH430GD	MECHA COVER ASS'Y	1	
344-1	RMF0221	FELT	1	
345	RML0381	HOLDING CATCH(1)	1	
346	RML0382	HOLDING CATCH(2)	1	
347	RML0384	UP PREVENTION LEVER	1	
348	RHM245ZA	MAGNET	1	
349	RME0174	CLAMP BASE SPRING	1	
350	RFKNACH430GE	CLAMP BASE ASS'Y	1	
351	RML0388-1	CLAMP LEVER	1	
352	RAE0152Z	TRAVERSE UNIT	1	
352-1	SHGD113-1	FLOATING RUBBER	1	
352-3	SNSD38	SCREW	1	
353	RMR0899-K	FIXED PLATE	1	
354	XTB3+10JFZ	SCREW	1	
355	RMR0975-W	TRY CAP	1	
356	RME0109	FLOATING SPRING A	2	
357	RME0142	FLOATING SPRING B	1	
358	RMK0293	TRAVERSE CHASSIS	1	
359	RMS0627	PIN	1	
360	XTN2+6G	SCREW	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
361	XTV2+6G	SCREW	2	
362	REZ0792	WIRE(3P/W2)	1	
363	REZ0793	WIRE(3P/W1)	1	
364	RMG0430-Q	RUBBER TUBE	4	
365	XTWS3+8T	SCREW	2	
366	RMS0350-1	PIN	1	
367	REEX0025	FFC(14P)	1	
368	REE0832	FFC(23P)	1	
369	RER0624-W2	CLAMPER	1	
A1	EUR645271	REMOTE CONTROL	1	
A1-1	UR64EC1987B	R/C BATTERY COVER	1	
⚠ A2	RJA0019-X	AC POWER SUPPLY CORD	1	GC
⚠ A2	RJA0053-1X	AC POWER SUPPLY CORD	1	GH
⚠ A2	RJA0055-K	AC POWER SUPPLY CORD	1	GK
A3	RQT4401-K	O/I BOOK	1	
⚠ A4	SJP5213-2	PLUG ADAPTOR	1	GK
A5	RSA0006-J	FM ANT	1	
A6	RSA0022	AM LOOP ANT	1	
A7	RJP1C0801	M3-M6 ADAPTOR	1	GK
A8	RJL1P016B15	VIDEO CORD	1	
C1	ECA1AKP820	10V 82U	1	
C101	ECBT1H102KB5	50V 1000P	1	
C101A	ECBT1C103NS5	16V 0.01U	1	
C102	ECBT1H102KB5	50V 1000P	1	
C102A	ECEA1CKS100	16V 10U	1	
C103	ECBA1H681KB5	50V 680P	1	
C103A	ECBT1C103NS5	16V 0.01U	1	
C104	ECFR1C223MR	16V 0.022U	1	
C104A	ECBT1H102KB5	50V 1000P	1	
C105,06	ECBA1H681KB5	50V 680P	2	
C106A	ECBT1C103NS5	16V 0.01U	1	
C107	ECBT1H473ZF5	50V 0.047U	1	
C108	ECEA1CKS330	16V 33U	1	
C108A	ECBT1H8R2KC5	50V 8.2P	1	
C109	ECEA1CKS101	16V 100U	1	
C109A	ECBT1H102KB5	50V 1000P	1	
C110	ECBT1C103NS5	16V 0.01U	1	
C111	ECBT1H561KB5	50V 560P	1	
C111A	ECEA1EKS4R7	25V 4.7U	1	
C112	ECBT1H561KB5	50V 560P	1	
C112A	ECBT1C103NS5	16V 0.01U	1	
C113	ECEA1AKS221	6.3V 220U	1	
C113A	ECBT1H102KB5	50V 1000P	1	
C114	ECEA1AKS221	6.3V 220U	1	
C114A	ECEA1HKS3R3	50V 3.3U	1	
C115	ECFR1C333JR	16V 0.033	1	
C115A	ECEA1EKS4R7	25V 4.7U	1	
C116	ECFR1C333JR	16V 0.033	1	
C116A	ECFR1C333KR	16V 0.033U	1	
C117	ECEA1HKM010B	50V 1	1	
C117A	ECFR1C183KR	16V 0.018U	1	
C118	ECEA1HKM010B	50V 1	1	
C118A	ECFR1C183KR	16V 0.018U	1	
C119	ECEA1HKA4R7B	50V 4.7U	1	
C119A	ECQP2A561JZT	100V 560P	1	
C120	ECEA1HKA4R7B	50V 4.7U	1	
C120A	ECEA1CKS100	16V 10U	1	
C121	ECEA1HKS010	50V 1U	1	
C121A	ECEA1HKAR47B	50V 0.47U	1	
C122,2A	ECEA1HKS010	50V 1U	2	
C123	ECBT1H102KB5	50V 1000P	1	
C123A	ECEA1HKS010	50V 1U	1	
C124	ECBT1H102KB5	50V 1000P	1	
C124A	ECBT1H101KB5	50V 100P	1	
C125	ECFR1C473MR	16V 0.047U	1	
C125A	ECEA1CKS220	16V 22U	1	
C126	ECFR1C473MR	16V 0.047U	1	
C126A	ECBT1H473ZF5	50V 0.047U	1	
C127	ECBT1C103MS5	16V 0.01U	1	
C127A	ECEA1CKS220	16V 22U	1	
C128	ECBT1C103MS5	16V 0.01U	1	
C129	ECBT1H821KB5	50V 820P	1	
C129A	ECEA0JKS101	6.3V 100U	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C130	ECBT1H821KB5	50V 820P	1	
C130A	ECEA0JKS101	6.3V 100U	1	
C131	ECBT1H821KB5	50V 820P	1	
C131A	ECBT1H101KB5	50V 100P	1	
C132	ECBT1H821KB5	50V 820P	1	
C132A	ECBT1H102KB5	50V 1000P	1	
C133	ECEA1HKA4R7B	50V 4.7U	1	
C133A	ECBT1H150JC5	50V 15P	1	
C134	ECEA1HKA4R7B	50V 4.7U	1	
C134A	ECBT1H180JC5	50V 18P	1	
C135-6A	ECBT1H102KB5	50V 1000P	3	
C137	ECFR1C472KR	16V 4700P	1	
C138	ECBT1C103KS5	16V 0.01U	1	
C139	ECEA1HKS2R2	50V 2.2U	1	
C139A	ECFR1C472KR	16V 4700P	1	
C140	ECEA1CKS100	16V 10U	1	
C141	ECEA1HKS0R1	50V 0.1U	1	
C141A	ECEA1HKS010	50V 1U	1	
C142	ECFR1C223MR	16V 0.022U	1	
C142A	ECEA1HKS010	50V 1U	1	
C143	ECEA1HKA4R7B	50V 4.7U	1	
C143A	ECBT1C472KR5	16V 4700P	1	
C144	ECEA1HKA4R7B	50V 4.7U	1	
C144A	ECBT1C472KR5	16V 4700P	1	
C145, 46	ECEA1CKS100	16V 10U	2	
C147	ECBT1C152KR5	16V 1500P	1	
C147A	ECBT1H102KB5	50V 1000P	1	
C148	ECBT1C152KR5	16V 1500P	1	
C148A	ECBT1C103NS5	16V 0.01U	1	
C149	ECBT1H104ZF5	50V 0.1U	1	
C150	ECEA1AKS470	10V 47U	1	
C151, 52	ECEA1HKS010	50V 1U	2	
C153	ECBT1H102KB5	50V 1000P	1	
C154	ECBT1H102KB5	50V 1000P	1	
C155, 56	ECEA1CKS100	16V 10U	2	
C161	ECEA1CKS101	16V 100U	1	
C162	ECA1CM471	16V 470	1	
C163, 64	ECEA1HKM010B	50V 1	2	
C165, 66	ECEA1CKS100	16V 10U	2	
C167, 68	ECEA1HKAR68B	50V 0.68U	2	
C169, 70	ECEA1HKA4R7B	50V 4.7U	2	
C171	ECEA1CKS100	16V 10U	1	
C173	ECBT1C103MS5	16V 0.01U	1	
C174	ECEA1HKA4R7B	50V 4.7U	1	
C175	ECA1VM221	35V 220	1	
C176	ECQV1H473JZ3	50V 0.047U	1	
C177, 78	ECBT1H102KB5	50V 1000P	2	
C179-81	ECBT1C103MS5	16V 0.01U	3	
C182	ECEA1HKA4R7B	50V 4.7U	1	
C183	ECQV1H474JZ3	50V 0.47U	1	
C184	ECQP1152JZT	100V 1500P	1	
C185	ECQP2A472JZT	100V 4700P	1	
C186	ECEA1AKS470	10V 47U	1	
C187, 88	ECBT1H101KB5	50V 100P	2	
C193, 94	ECBT1H102KB5	50V 1000P	2	
C201	ECEA1CKS101	16V 100U	1	
C202	ECBT1H104ZF5	50V 0.1U	1	
C203, 04	ECBT1H331KB5	50V 330P	2	
C205, 06	ECBT1C222KR5	16V 2200P	2	
C301-04	ECBT1H101KB5	50V 100P	4	
C305	ECBT1H102KB5	50V 1000P	1	
C306	RCA1AM331BT	10V 330	1	
C307, 08	ECBT1H221KB5	50V 220P	2	
C309	ECBT1C152KR5	16V 1500P	1	
C310	ECEA1HKS0R1	50V 0.1U	1	
C311, 12	ECEA1HKS010	50V 1U	2	
C313, 14	ECFR1C563KR	16V 0.056	2	
C315, 16	ECEA1HKAR15B	50V 0.15	2	
C317, 18	ECFR1C223KR	16V 0.022U	2	
C319, 20	ECFR1C393KR	16V 0.039U	2	
C321, 22	ECFR1C223KR	16V 0.022U	2	
C323, 24	ECBT1C332KR5	16V 3300P	2	
C325, 26	ECBT1C222KR5	16V 2200P	2	
C327, 28	ECBT1C272KR5	16V 2700P	2	
C329, 30	ECBT1C152KR5	16V 1500P	2	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C331, 32	ECFR1C333KR	16V 0.033U	2	
C333, 34	ECBA1H681KB5	50V 680P	2	
C335, 36	ECBT1H102KB5	50V 1000P	2	
C337-40	ECEA1HKAR15B	50V 0.15	4	
C341, 42	ECBT1H102KB5	50V 1000P	2	
C343, 44	ECBT1H471KB5	50V 470P	2	
C345, 46	ECEA1HKA4R7B	50V 4.7U	2	
C347, 48	ECEA1HKS010	50V 1U	2	
C349, 50	ECEA1CKS1D0	16V 10U	2	
C351, 52	ECBT1H101KB5	50V 100P	2	
C353, 54	ECBT1H470J5	50V 47P	2	
C355, 56	ECBT1E103ZF	25V 0.01U	2	
C357, 58	ECBT1C332KR5	16V 3300P	2	
C359, 60	ECEA1CKS100	16V 10U	2	
C363	ECBT1H221KB5	50V 220P	1	
C365, 66	ECFR1C104MR	16V 0.1U	2	
C368	ECBT1H102KB5	50V 1000P	1	
C369, 70	ECEA1HKS2R2	50V 2.2U	2	
C371-73	ECBT1H104ZF5	50V 0.1U	3	
C374-76	ECBT1H470J5	50V 47P	3	
C377, 78	ECBT1E103ZF	25V 0.01U	2	
C385	ECBT1E103ZF	25V 0.01U	1	
C390	ECEA1HKS3R3	50V 3.3U	1	
C391, 92	ECQV1H683JZ3	50V 0.068	2	
C393, 94	ECBT1H101KB5	50V 100P	2	
C395	ECBT1H221KB5	50V 220P	1	
C400	ECBT1H101KB5	50V 100P	1	
⚠ C504	ECA1VM332	35V 3300U	1	
⚠ C505, 06	ECA1VM562E	35V 5600U	2	
⚠ C507	ECA1VM332	35V 3300U	1	
⚠ C508	ECEA1EM222B	25V 2200U	1	
C509, 10	ECKR2H103ZF5	500V 0.01	2	
C511	ECBT1E103ZF	25V 0.01U	1	
C512	ECEA1CM221B	16V 220	1	
C513	ECBT1H102KB5	50V 1000P	1	
C514	ECEA1AKS101	10V 100U	1	
C515	ECBT1E103ZF	25V 0.01U	1	
C516	ECEA1AKS220	10V 22U	1	
C517	ECBT1E103ZF	25V 0.01U	1	
C518	ECEA1CKA470B	16V 47U	1	
C519	ECBT1E223ZF	25V 0.022U	1	
C520	ECBT1E103ZF	25V 0.01U	1	
C521	ECEA1CKS330	16V 33U	1	
C522	ECEA1EM101B	25V 100U	1	
C523	RCA1EM102BT	25V 1000U	1	
C524	ECBT1E103ZF	25V 0.01U	1	
C525	ECEA1AKS330	10V 33U	1	
C526	ECBT1E103ZF	25V 0.01U	1	
C527	ECEA1AM331B	10V 330	1	
C528	ECBT1H102KB5	50V 1000P	1	
C528A	ECEA1HKA4R7B	50V 4.7U	1	
C529	ECEA1HM101B	50V 100	1	
C530	ECEA1JM101B	63V 100	1	
C531	ECKR2H102ZF5	500V 1000P	1	
C532	ECEA1VKA100B	35V 10U	1	
C533	ECEA1HM101B	50V 100	1	
C534	ECEA0JKS470	6.3V 47UF	1	
C535	ECBT1E103ZF	25V 0.01U	1	
C538-41	ECBT1E103ZF	25V 0.01U	4	
C601	ECBT1H104ZF5	50V 0.1U	1	
C603	ECBT1H104ZF5	50V 0.1U	1	
C607-10	ECBT1H471KB5	50V 470P	4	
C611, 12	ECBT1H150JC5	50V 15P	2	
C613, 14	ECBT1H220JC5	50V 22P	2	
C615, 16	ECKR2H103ZF5	500V 0.01	2	
C617	ECEA1HKNR47B	50V 0.47U	1	
C618	ECEA1CKS100	16V 10U	1	
C619, 20	ECBT1H104ZF5	50V 0.1U	2	
C625, 27	ECBT1H473ZF5	50V 0.047U	2	
C630, 31	ECBT1E103ZF	25V 0.01U	2	
C641, 42	ECBT1H104ZF5	50V 0.1U	2	
C651	ECAZAM100	100V 10U	1	
C659, 60	ECBT1H104ZF5	50V 0.1U	2	
C701	ECEA0JKA330I	6.3V 33U	1	
C702	ECUZ1E104MBN	25V 0.1	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C703	ECEA0JKS101	6.3V 100U	1	
C704	ECUZ1E104MBN	25V 0.1	1	
C706	ECUZ1H272KBN	50V 2700P	1	
C707	ECUZ1E273KBN	25V 0.027	1	
C708	ECUZ1H392KBN	50V 3900P	1	
C709	ECUZ1E563KBN	25V 0.056	1	
C710	ECUV1H151KCN	50V 150P	1	
C711, 12	ECUZ1E104ZFN	25V 0.1	2	
C713	ECUZ1E104MBN	25V 0.1	1	
C714	ECEA0JKS101	6.3V 100U	1	
C715	ECUZ1H182KBN	50V 1800P	1	
C716	ECUZ1H821KBN	50V 820P	1	
C717	ECUZ1E104ZFN	25V 0.1	1	
C718	ECUZ1C224KBN	16V 0.22	1	
C721, 22	ECUZ1H100DCN	10P 50V	2	
C723	ECEA1AKS221	10V 220U	1	
C724	ECUZ1E104MBN	25V 0.1	1	
C725, 26	ECUZ1H102KBN	50V 1000P	2	
C730	ECUZ1E104ZFN	25V 0.1	1	
C731, 32	ECEA1AKS221	6.3V 220U	2	
C733	ECUZ1E104MBN	25V 0.1	1	
C734	ECEA1AKS221	10V 220U	1	
C735-37	ECUZ1E104ZFN	25V 0.1	3	
C738	ECUZ1E104MBN	25V 0.1	1	
C739	ECUZ1H102KBN	50V 1000P	1	
C740	ECUZ1E273KBN	25V 0.027	1	
C743	ECUZ1E104ZFN	25V 0.1	1	
C744	ECUZ1E123KBN	25V 0.012	1	
C745	ECUZ1H102KBN	50V 1000P	1	
C747	ECUV1H221KBN	50V 220	1	
C749	ECUZ1H222KBN	50V 2200P	1	
C750, 51	ECUZ1E104MBN	25V 0.1	2	
C753	ECUZ1H471KBM	50V 470P	1	
C762	ECUZ1H471KBN	50V 470P	1	
C801	ECFR1C333KR	16V 0.033U	1	
C803	ECBT1H101KB5	50V 100P	1	
C805	ECEA0JKS470	6.3V 47U	1	
C806	ECBT1E103ZF	25V 0.01U	1	
C807, 08	ECBT1C152KR5	16V 1500P	2	
C809	ECEA1CKS100	16V 10U	1	
C810	ECBT1E103ZF	25V 0.01U	1	
C811	ECBT1H180JC5	50V 18P	1	
C814	ECFR1C823MR	16V 0.082U	1	
C815	ECBT1E103ZF	25V 0.01U	1	
C818	ECBT1C222KR5	16V 2200P	1	
C819	ECBT1E103ZF	25V 0.01U	1	
C820	ECEA1CKS100	16V 10U	1	
C821	ECEA1HKS010	50V 1U	1	
C822, 23	ECBT1H101KB5	50V 100P	2	
C824	ECEA1HKS010	50V 1U	1	
C826	ECEA1AKS101	10V 100U	1	
C829	ECFR1C473KR	16V 0.047U	1	
C832	ECFR1C473KR	16V 0.047U	1	
C834	ECBT1E103ZF	25V 0.01U	1	
C835, 36	ECBT1C332KR5	16V 3300P	2	
C838, 39	ECBT1H101KB5	50V 100P	2	
C840-45	ECEA1CKS100	16V 10U	6	
C847	ECBT1E103ZF	25V 0.01U	1	
C849, 50	ECEA1CKS100	16V 10U	2	
C853	ECFR1C473KR	16V 0.043U	1	
C854	ECFR1C683KR	16V 0.068U	1	
C855	ECFR1C563KR	16V 0.056	1	
C856	ECFR1C683KR	16V 0.068U	1	
C857	ECFR1C823MR	16V 0.082U	1	
C859, 60	ECBT1H101KB5	50V 100P	2	
C876	ECEA1CKS330	16V 33U	1	
C879	ECFR1C683KR	16V 0.068U	1	
C880	ECFR1C393KR	16V 0.039U	1	
C881	ECQV1H154JZ3	50V 0.15	1	
C884	ECFR1C104KR	16V 0.1U	1	
C885	ECBT1C562KR5	16V 5600P	1	
C890, 91	ECEA1HKS010	50V 1U	2	
C895	ECBT1H101KB5	50V 100P	1	
C896	ECEA0JKS220	6.3V 22	1	
C901	ECBT1H101KB5	50V 100P	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C901A	ECA0JM471	6.3V 470U	1	
C902, 2A	ECBT1H104ZF5	50V 0.1U	2	
C903	ECBT1H101KB5	50V 100P	1	
C903A	ECEA1HKS2R2	50V 2.2U	1	
C904	ECBT1H101KB5	50V 100P	1	
C904A	ECBT1E103ZF	25V 0.01U	1	
C905	ECBT1H101KB5	50V 100P	1	
C905A	ECBT1H102KB5	50V 1000P	1	
C906	ECBT1H101KB5	50V 100P	1	
C906A	ECEA0JKS101	6.3V 100U	1	
C907	ECBT1H101KB5	50V 100P	1	
C907A	ECBT1H102KB5	50V 1000P	1	
C908	ECBT1C103MS5	16V 0.01U	1	
C908A	ECEA1AKS101	10V 100U	1	
C909	ECBT1C103MS5	16V 0.01U	1	
C909A	ECBT1H104ZF5	50V 0.1U	1	
C910	ECBT1H561KB5	50V 560P	1	
C911	ECBT1H104ZF5	50V 0.1U	1	
C912	ECBT1H561KB5	50V 560P	1	
C913-15	ECBT1H102KB5	50V 1000P	3	
C916	ECBT1E103ZF	25V 0.01U	1	
C917	ECBT1H331KB5	50V 330P	1	
C918-20	ECBT1H561KB5	50V 560P	3	
C921	ECBT1E103ZF	25V 0.01U	1	
C922	ECBT1H101KB5	50V 100P	1	
C923	ECBT1H151KB5	50V 150P	1	
C924	ECFR1C333KR	16V 0.033U	1	
C925	ECBT1C472KR5	16V 4700P	1	
C926	ECBT0J153MS5	6.3V 0.015U	1	
C927	ECBT1H561KB5	50V 560P	1	
C928	ECBT1H101KB5	50V 100P	1	
C929, 30	ECBT1H561KB5	50V 560P	2	
C931	ECBT0J153MS5	6.3V 0.015U	1	
C932	ECBT1H561KB5	50V 560P	1	
C933	ECBT1H101KB5	50V 100P	1	
C934	ECBT1H102KB5	50V 1000P	1	
C935-37	ECBT1E103ZF	25V 0.01U	3	
C937A	ECBT1H104ZF5	50V 0.1U	1	
C938	ECBT1H150JC5	50V 15P	1	
C939	ECBT1H180JC5	50V 18P	1	
C939A	ECBT1E103ZF	25V 0.01U	1	
C940, 41	ECBT1H680J5	50V 68P	2	
C941A	ECBT1E103ZF	25V 0.01U	1	
C942	ECBT1H560J5	50V 56P	1	
C942A	ECA0JM471	6.3V 470U	1	
C943	ECBT1H560J5	50V 56P	1	
C944, 45	ECBT1H102KB5	50V 1000P	2	
C946, 47	ECA0JKF101B	6.3V 100U	2	
C948	ECA0JKF101B	6.3V 100U	1	
C949, 50	ECBT1H102KB5	50V 1000P	2	
C951	ECEA1VKA220B	35V 22	1	
C951A, 52	ECBT1H102KB5	50V 1000P	2	
C953	ECEA0JKS101	6.3V 100U	1	
C953A	ECBT1H102KB5	50V 1000P	1	
C954	ECEA0JM102B	6.3V 1000	1	
C954A	ECBT1H102KB5	50V 1000P	1	
C955	ECEA1HKS3R3	50V 3.3U	1	
C955A	ECBT1H102KB5	50V 1000P	1	
C956	ECEA1AKS220	10V 22U	1	
C956A	ECBT1H102KB5	50V 1000P	1	
C957	ECEA1CKS220	16V 22U	1	
C958	ECEA1HKAR47B	50V 0.47U	1	
C959, 60	ECEA1HKS010	50V 1U	2	
C961	ECEA1AM471B	10V 470	1	
C962	ECEA1HKS010	50V 1U	1	
C963	ECEA1CKS100	16V 10U	1	
C964	ECEA1HKS010	50V 1U	1	
C965	ECEA1VKA220B	35V 22	1	
C966-69	ECEA1HKS0R1	50V 0.1U	4	
C970, 71	ECEA1HKS010	50V 1U	2	
C972	ECEA0JKS101	6.3V 100U	1	
C973	ECA1HM3R3	50V 3.3	1	
C974	ECBT1C332KR5	16V 3300P	1	
C975, 76	ECBT1H101KB5	50V 100P	2	
C984	ECBT1E103ZF	25V 0.01U	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C985	ECFR1C333KR	16V 0.033U	1	
C986	ECBT1H102KB5	50V 1000P	1	
C987	ECFR1C153KR	16V 0.015UF	1	
C988	ECEA1HKA4R7B	50V 4.7U	1	
C989	ECEA1CKS100	16V 10U	1	
C990	ECEA1HKSR33	50V 0.33UF	1	
C991	ECBT1H102KB5	50V 1000P	1	
C992-93	ECBT1H101KB5	50V 100P	3	
C994	ECEA1AKS221	6.3V 220U	1	
C1000, 01	ECUV1H100DCV	50V 10P	2	
C1002-12	ECUZNC104ZFV	16V 0.1U	11	
C1013	ECUV1H101KCV	50V 100P	1	
C1014	ECUV1H151KBV	50V 150P	1	
C1015	ECUV1H271KBV	50V 270P	1	
C1016, 17	ECUZNC104ZFV	16V 0.1U	2	
C1018	ECUV1H331KDV	50V 330P	1	
C1019	ECUV1H101KCV	50V 100P	1	
C1020	ECUZNC104ZFV	16V 0.1U	1	
C1021	ECUV1H101KCV	50V 100P	1	
CF201, 02	RLFFETWN01DD	CERAMIC FILTER	2	
CN1	RJS1A6714	CONNECTOR(14P)	1	
CN100	RJS1A5210	CONNECTOR(10P)	1	
CN101	RJS1A5205	CONNECTOR(5P)	1	
CN101B, 2B	RJU100W07	CONNECTOR(7P)	2	
CN201	RJS8T7ZA	CONNECTOR(7P)	1	
CN501	RJP5G4YA	CONNECTOR(5P)	1	
CN502	RJP9G4YA	CONNECTOR(9P)	1	
CN503, 04	RJU057W012	CONNECTOR(12P)	2	
CN701	RJS2A6016	CONNECTOR(16P)	1	
CN702	RJS2A4230-1F	CONNECTOR(30P)	1	
CN903	RJS1A9320	CONNECTOR(20P)	1	
CN903A	RJS1A9420	CONNECTOR(20P)	1	
CN904	RJS1A9323	CONNECTOR(23P)	1	
CN904A	RJS1A9423	CONNECTOR(23P)	1	
CN905	RJS2A3330	CONNECTOR(30P)	1	
CN906	RJU071H11M	CONNECTOR(11P)	1	
CN906A	RJU107K30M	CONNECTOR(30P)	1	
CN907	RJS1A6814-J	CONNECTOR(14P)	1	
CN1000	RJT107K30T	CONNECTOR(30P)	1	
CP1, P2	RJT100W07	CONNECTOR(7P)	2	
CP101, 02	RJT071H09A	CONNECTOR(9P)	2	
CP503, 04	RJT057W012-1	CONNECTOR(12P)	2	
CP906	RJT071H11A	CONNECTOR(11P)	1	
CS101, 02	RJS1A6805-J	CONNECTOR(5P)	2	
CS951	RJU071H09M	CONNECTOR(9P)	1	
CS971	RJU071H09M	CONNECTOR(9P)	1	
⚠ D101	MTZJ5R1BTA	DIODE	1	
D171	RVD1SS133TA	DIODE	1	
D172	MTZJ4R7BTA	DIODE	1	
D173	RVD1SS133TA	DIODE	1	
D174	MTZJ3R6BTA	DIODE	1	
D175	RVD1SS133TA	DIODE	1	
D201, 02	RVD1SS133TA	DIODE	2	
D302	RVD1SS133TA	DIODE	1	
⚠ D331	MTZJ5R1BTA	DIODE	1	
D400-02	MA165	DIODE	3	
D403	1D3E	DIODE	1	
D478	MA165	DIODE	1	
⚠ D501-06	1N5402BM21	DIODE	6	
⚠ D507-12	1D3E	DIODE	6	
⚠ D513	MTZJ5R1CTA	DIODE	1	
⚠ D515	MTZJ16ATA	DIODE	1	
⚠ D516	MTZJ8R2BTA	DIODE	1	
D517	RVD1SS133TA	DIODE	1	
⚠ D518	MTZJ9R1CTA	DIODE	1	
⚠ D519, 9A	MTZJ5R6BTA	DIODE	2	
⚠ D520	MTZJ11CTA	DIODE	1	
D521	1D3E	DIODE	1	
⚠ D522	MTZJ6R8ATA	DIODE	1	
D523	1D3E	DIODE	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
⚠ D523A	MTZJ30DTA	DIODE	1	
D524	RVD1SS133TA	DIODE	1	
D525	1SS291TA	DIODE	1	
D525A-29	RVD1SS133TA	DIODE	5	
⚠ D530-32	1D3E	DIODE	3	
D532A	RVD1SS133TA	DIODE	1	
⚠ D533	1D3E	DIODE	1	
D533A	RVD1SS133TA	DIODE	1	
⚠ D534	1D3E	DIODE	1	
D534A	MA165	DIODE	1	
⚠ D535	1D3E	DIODE	1	
D535A-37	MA165	DIODE	3	
D538, 39	RL1N4003N02	DIODE	2	
D601, 02	RK306LFU1	DIODE	2	
⚠ D604-07	MTZJ24DTA	DIODE	4	
D704	RVD1SS133TA	DIODE	1	
D803, 04	RVD1SS133TA	DIODE	2	
D806, 07	RVD1SS133TA	DIODE	2	
D901	SML79423C	LED	1	
D901A	MA165	DIODE	1	
D902-08	SML79423C	LED	7	
D909, 10	RVD1SS133TA	DIODE	2	
⚠ D915	MTZJ5R1BTA	DIODE	1	
D916-19	LNJ301MPUJAD	LED	4	
D920	SLR325DCT31	LED	1	
D921	LNJ301MPUJAD	LED	1	
D923, 24	LNJ301MPUJAD	LED	2	
D927	SLR325DCT31	LED	1	
D929-32	LNJ301MPUJAD	LED	4	
D933-41	RVD1SS133TA	DIODE	9	
D946-50	RVD1SS133TA	DIODE	5	
D951	MA165	DIODE	1	
D951A-64	RVD1SS133TA	DIODE	14	
D968, 69	RVD1SS133TA	DIODE	2	
D971	MA165	DIODE	1	
D970	RVD1SS133TA	DIODE	1	
D973, 74	1SS291TA	DIODE	2	
D975, 76	RVD1SS133TA	DIODE	2	
D977	1SS291TA	DIODE	1	
D978-80	RVD1SS133TA	DIODE	3	
D981	1SS291TA	DIODE	1	
D982	RVD1SS133TA	DIODE	1	
⚠ D987	MA4020LTA	DIODE	1	
D990, 91	LNJ301MPUJAD	LED	2	
D992-99	RVD1SS133TA	DIODE	8	
D1002, 03	RVD1SS133TA	DIODE	2	
E500	SNE1004-2	GND PLATE	1	
⚠ F1	XBA2C20TB0	FUSE, T2A	1	GK GH
⚠ F1	XBA2C401B0	FUSE, T4A	1	GC
⚠ F2	XBA2C20TB0	FUSE, T2A	1	GC
FC501-04	RJR0169T	FUSE HOLDER	4	FC503, 04 (GC) ONLY
FL901	RSL0258-F	FL DISPLAY	1	
⚠ FP1, P2	RSFMB40KT-L	FUSE PROTECTOR	2	
H100	RMR0319	CABLE HOLDER(10P)	1	
H101	RMR0314	CABLE HOLDER(5P)	1	
H201	RMR0317	CABLE HOLDER(8P)	1	
H501	RJS1A5505	WIRE HOLDER(5P)	1	
H502	RJS1A5509	WIRE HOLDER(9P)	1	
H905A	RJS1A5507	HOLDER(7P)	1	
IC1	BA6418N	IC	1	
IC101	M51167BFPNA	IC	1	
IC101A	LA1833MN TLM	IC	1	
IC102	BA7755A	IC	1	
IC102A	LC72131MDTRM	IC	1	
IC103	CXA1102M-T4	IC	1	
IC104	BU4066BCF-E2	IC	1	
IC105	DU2040F-E2	IC	1	
IC301	M62433AFP	IC	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
IC302	M5218AP	IC	1	
IC308	BU4066BCF-E2	IC	1	
⚠ IC501	DA178M05T	IC	1	
⚠ IC601	RSN309W44-P	IC	1	
IC701	AN8837SBE1	IC	1	
IC702	MN662741RPA	IC	1	
IC703	AN8878NSBE2	IC	1	
IC801-03	M5228FPE1	IC	3	
IC804	BA4558FDXE2	IC	1	
IC901	M38198MCA814	IC	1	
IC901A	M38067MC388F	IC	1	
IC902	BA3835F-E2	IC	1	
IC902A	TC4013BFN	IC	1	
IC903, 04	BU2090F-E2	IC	2	
IC905	BU9255FS-E2	IC	1	
IC907	TC7W14FTE12L	IC	1	
IC951	ON2180RLC	IC	1	
IC971	ON2180RLC	IC	1	
IC1000	MN89103M2	IC	1	
IC1001	LH532KVA	IC	1	
IC1002	M44260CTP7	IC	1	
IC1003	TC7WU04FUT2L	IC	1	
IC1004	TC7W14FUTE1L	IC	1	
JK101	RJH5404	JACK, ANTENNA	1	
JK301	RJH2403	JACK, LINE OUT/AUX	1	
⚠ JK500	SJS9236	JACK, AC INLET	1	
JK601	RJR0054B-J	JACK, SPEAKERS (LOW)	1	
JK602	RJR0054C-J	JACK, SPEAKERS (HIGH)	1	
JK603	RJH2301MS	JACK, CENTER SURROUND	1	
JK901	RJJ37TK07-H	JACK, MIC 1	1	
JK901A	SJFD7-6	JACK, VIDEO OUT	1	
JK902, 03	RJJ37TK07-H	JACK, MIC 2/HEADPHONES	2	
L101, 02	ELESNR68MA	COIL, CHOKE	2	
L103	ELEXTR47MA9	COIL, CHOKE	1	
L201	RLO8C002M-T	COIL, BIAS OSC	1	
L202	RLQZB470KT-D	COIL, CHOKE	1	
⚠ L500	RLQZ271M	COIL, CHOKE	1	GK
L701-05	RLBN102V-Y	COIL, CHOKE	5	
L901	RLQ7P3R3KT-Y	COIL, CHOKE	1	
L902	RLQZP101KT-Y	COIL, CHOKE	1	
L1000	RLQP1R8KT2-Y	COIL, CHOKE	1	
L1002	RLQP2R7KT2-Y	COIL, CHOKE	1	
P1	RPNX0079	POLYFOAM	1	
P2	RPGX0495	PACKING CASE	1	GK
P2 02	RPGX0499	PACKING CASE	1	GC GH
P3	RPFX0007	BAG (SET)	1	
P4	SPSD155	ACCESSORY BOX	1	
P5	SPR1061	POLYETHYLENE COVER	1	
Q101	2SJ164QRTA	TRANSISTOR	1	
Q101A	2SC2787L	TRANSISTOR	1	
Q102-04	2SJ164QRTA	TRANSISTOR	3	
Q106	RVTDTA114SET	TRANSISTOR	1	
Q107, 08	BA1L4ZTA	TRANSISTOR	2	
Q115, 16	2SD1020HTA	TRANSISTOR	2	
Q117	BA1L4MTA	TRANSISTOR	1	
Q118-21	2SC2785FE	TRANSISTOR	4	
Q151, 52	BA1L4ZTA	TRANSISTOR	2	
Q153, 54	2SC1740SLNET	TRANSISTOR	2	
Q171	2SD1302STA	TRANSISTOR	1	
Q173	BA1L4ZTA	TRANSISTOR	1	
Q174	2SC2785FE	TRANSISTOR	1	
Q175, 76	2SD1302STA	TRANSISTOR	2	
Q179	2SC2784FTA	TRANSISTOR	1	
Q203	2SD965Q	TRANSISTOR	1	
Q206, 07	2SB621R	TRANSISTOR	2	
Q208, 09	BA1A4ZTA	TRANSISTOR	2	
Q218	BN1A4MTA	TRANSISTOR	1	
Q220	BN1L3NTA	TRANSISTOR	1	
Q303, 04	2SD1020HTA	TRANSISTOR	2	
Q305	RVTDTA114TST	TRANSISTOR	1	
Q308	BA1A4MTA	TRANSISTOR	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
Q401-03	2SC3311AR	TRANSISTOR	3	
⚠ Q501	2SD2395E	TRANSISTOR	1	
⚠ Q502	2SC3940AQSTA	TRANSISTOR	1	
⚠ Q503	2SD2395E	TRANSISTOR	1	
⚠ Q504	2SB1566E	TRANSISTOR	1	
Q505	2SC1740SQ	TRANSISTOR	1	
⚠ Q507, 08	2SD2395E	TRANSISTOR	2	
Q509	RVTDTA114SET	TRANSISTOR	1	
Q510	RVTDTC114ES	TRANSISTOR	1	
⚠ Q511	2SC2001K	TRANSISTOR	1	
⚠ Q512	2SD2395E	TRANSISTOR	1	
⚠ Q513	KSD471ACYGTA	TRANSISTOR	1	
⚠ Q514	2SB1238QRTV2	TRANSISTOR	1	
Q515	2SC2785FE	TRANSISTOR	1	
Q515A	RVTDTC114TST	TRANSISTOR	1	
Q516	2SC2785FF	TRANSISTOR	1	
Q516A	2SA933SSTA	TRANSISTOR	1	
Q519	2SC1740SQ	TRANSISTOR	1	
Q520	2SA933SSTA	TRANSISTOR	1	
⚠ Q521	2SB621ARTA	TRANSISTOR	1	
Q522	2SC3311AR	TRANSISTOR	1	
⚠ Q523	2SB621ARTA	TRANSISTOR	1	
Q524	2SC3311AR	TRANSISTOR	1	
Q525	RVTDTA114SET	TRANSISTOR	1	
⚠ Q601	2SD1859QRTV2	TRANSISTOR	1	
⚠ Q602	2SB1238QRTV2	TRANSISTOR	1	
Q604	2SA933SSTA	TRANSISTOR	1	
Q701	2SA1037AKSTX	TRANSISTOR	1	
Q702	DTC114YKA146	TRANSISTOR	1	
Q801, 02	2SD1450STA	TRANSISTOR	2	
Q803	RVTDTA114TST	TRANSISTOR	1	
Q804-07	2SD1450STA	TRANSISTOR	4	
Q808, 09	2SD1020HTA	TRANSISTOR	2	
Q811-13	RVTDTA114TST	TRANSISTOR	3	
Q815	RVTDTC114TST	TRANSISTOR	1	
Q901	RVTDTA114SET	TRANSISTOR	1	
Q901A	RVTDTC114YST	TRANSISTOR	1	
Q902-04	RVTDTA114SET	TRANSISTOR	4	
Q904A	2SD2144S	TRANSISTOR	1	
Q905-08	RVTDTA114SET	TRANSISTOR	4	
Q909	RVTDTC114ES	TRANSISTOR	1	
Q912, 13	2SC3311AR	TRANSISTOR	2	
Q920-33	2SC1740SQ	TRANSISTOR	14	
Q934	RVTDTC124EST	TRANSISTOR	1	
Q935	2SB621A-R	TRANSISTOR	1	
Q937	2SC1740SQ	TRANSISTOR	1	
R14, 15	ERDS2FJ223	1/4W 22K	2	
R16, 17	ERDS2FJ123	1/4W 12K	2	
R101	ERDS2FJ334	1/4W 330K	1	
R102	ERDS2FJ104	1/4W 100K	1	
R102A	ERDS2FJ472	1/4W 4.7K	1	
R103	ERDS2FJ153	1/4W 15K	1	
R103A	ERDS2FJ271	1/4W 270	1	
R104	ERDS2FJ153	1/4W 15K	1	
R104A	ERDS2FJ102	1/4W 1K	1	
R105	ERDS2FJ271	1/4W 270	1	
R105A	ERDS2FJ471	1/4W 470	1	
R106	ERDS2FJ222	1/4W 2.2K	1	
R106A	ERDS2FJ474	1/4W 470K	1	
R107	ERDS2FJ330	1/4W 33	1	
R107A	ERDS2FJ331	1/4W 330	1	
R108	ERDS2FJ330	1/4W 33	1	
R109, 10	ERDS2FJ432	1/4W 4.3K	2	
R110A	ERDS2FJ102	1/4W 1K	1	
R111	ERDS2FJ292	1/4W 2.9K	1	
R111A	ERDS2FJ391	1/4W 390	1	
R112	ERDS2FJ222	1/4W 2.2K	1	
R112A	ERDS2FJ104	1/4W 100K	1	
R113	ERDS2FJ103	1/4W 10K	1	
R114	ERDS2FJ562	1/4W 5.6K	1	
R115	ERDS2FJ474	1/4W 470K	1	
R115A	ERDS2FJ561	1/4W 560	1	
R116	ERDS2FJ474	1/4W 470K	1	
R116A	ERDS2FJ102	1/4W 1K	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R117	ERDS2FJ274	1/4W 270K	1	
R117A	ERDS2FJ473	1/4W 47K	1	
R118	ERDS2FJ274	1/4W 270K	1	
R118A	ERDS2FJ472	1/4W 4.7K	1	
R119	ERDS2FJ682	1/4W 6.8K	1	
R120	ERDS2FJ473	1/4W 47K	1	
R121	ERDS2FJ333	1/4W 33K	1	
R121A	ERDS2FJ223	1/4W 22K	1	
R122	ERDS2FJ333	1/4W 33K	1	
R122A	ERDS2FJ272	1/4W 2.7K	1	
R123	ERDS2FJ103	1/4W 10K	1	
R123A	ERDS2FJ683	1/4W 68K	1	
R124	ERDS2FJ103	1/4W 10K	1	
R124A	ERDS2FJ271	1/4W 270	1	
R125	ERDS2FJ102	1/4W 1K	1	
R125A	ERDS2FJ471	1/4W 470	1	
R126	ERDS2FJ102	1/4W 1K	1	
R126A	ERDS2FJ152	1/4W 1.5K	1	
R127	ERDS2FJ471	1/4W 470	1	
R128	ERDS2FJ820	1/4W 82	1	
R129	ERDS2FJ822	1/4W 8.2K	1	
R129A	ERDS2FJ273	1/4W 27K	1	
R130	ERDS2FJ822	1/4W 8.2K	1	
R130A	ERDS2FJ103	1/4W 10K	1	
R131	ERDS2FJ683	1/4W 68K	1	
R131A	ERDS2FJ680	1/4W 68	1	
R132	ERDS2TJ335T	1/4W 3.3M	1	
R132A	ERDS2FJ103	1/4W 10K	1	
R133	ERDS2FJ332	1/4W 3.3K	1	
R133A	ERDS2FJ102	1/4W 1K	1	
R134	ERDS2FJ474	1/4W 470K	1	
R134A	ERDS2FJ471	1/4W 470	1	
R135, 36	ERDS2FJ102	1/4W 1K	2	
R137	ERDS2FJ103	1/4W 10K	1	
R137A	ERDS2FJ102	1/4W 1K	1	
R138	ERDS2FJ103	1/4W 10K	1	
R138A	ERDS2FJ332	1/4W 3.3K	1	
R139	ERDS2FJ103	1/4W 10K	1	
R141	ERDS2FJ682	1/4W 6.8K	1	
R141A	ERDS2FJ102	1/4W 1K	1	
R142	ERDS2FJ682	1/4W 6.8K	1	
R142A	ERDS2FJ102	1/4W 1K	1	
R143	ERDS2FJ222	1/4W 2.2K	1	
R143A	ERDS2FJ223	1/4W 22K	1	
R144	ERDS2FJ222	1/4W 2.2K	1	
R145	ERDS2FJ103	1/4W 10K	1	
R145A	ERDS2FJ104	1/4W 100K	1	
R146	ERDS2FJ103	1/4W 10K	1	
R146A	ERDS2FJ104	1/4W 100K	1	
R149, 50	ERDS2FJ272	1/4W 2.7K	2	
R151, 52	ERDS2FJ105	1/4W 1M	2	
R153, 54	ERDS2FJ102	1/4W 1K	2	
R155, 56	ERDS2FJ681	1/4W 680	2	
R158	ERDS2FJ221	1/4W 220	1	
R159, 60	ERDS2FJ222	1/4W 2.2K	2	
R161, 62	ERDS2FJ472	1/4W 4.7K	2	
R163	ERDS2FJ433	1/4W 43K	1	
R165	ERDS2FJ563	1/4W 56K	1	
R166	ERDS2FJ104	1/4W 100K	1	
R167	ERDS2FJ470	1/4W 47	1	
R170	ERDS2FJ102	1/4W 1K	1	
R172	ERDS2FJ331	1/4W 330	1	
R173, 74	ERDS2FJ103	1/4W 10K	2	
R176	ERDS2FJ822	1/4W 8.2K	1	
R177	ERDS2FJ472	1/4W 4.7K	1	
R178	ERDS2FJ1R2	1/4W 1.2	1	
R179, 80	ERDS2FJ472	1/4W 4.7K	2	
R181	ERDS2FJ332	1/4W 3.3K	1	
R182	ERDS2FJ1R0	1/4W 1	1	
R183-85	ERDS2FJ104	1/4W 100K	3	
R186, 88	ERDS2FJ102	1/4W 1K	2	
R189	ERDS2FJ472	1/4W 4.7K	1	
R190	ERDS2FJ104	1/4W 100K	1	
R191	ERDS2FJ563	1/4W 56K	1	
R192	ERDS2FJ470	1/4W 47	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R193-95	ERDS2FJ104	1/4W 100K	3	
R206	ERDS2FJ221	1/4W 220	1	
R213	ERDS2FJ152	1/4W 1.5K	1	
R215, 16	ERDS2FJ222	1/4W 2.2K	2	
R220	ERDS2FJ472	1/4W 4.7K	1	
R221, 25	ERDS2FJ2R7	1/4W 2.7	2	
R226, 27	ERDS2FJ102	1/4W 1K	2	
R228	ERDS2FJ472	1/4W 4.7K	1	
R229	ERDS2FJ103	1/4W 10K	1	
R230	ERDS2FJ472	1/4W 4.7K	1	
R232	ERDS2FJ102	1/4W 1K	1	
R233	ERDS2FJ222	1/4W 2.2K	1	
R234	ERDS2FJ472	1/4W 4.7K	1	
R235, 36	ERDS2FJ472	1/4W 4.7K	2	
R301, 02	ERDS2FJ222	1/4W 2.2K	2	
R303, 04	ERDS2FJ224	1/4W 220K	2	
R305, 06	ERDS2FJ103	1/4W 10K	2	
R307, 08	ERDS2FJ472	1/4W 4.7K	2	
R309, 10	ERDS2FJ103	1/4W 10K	2	
R311, 12	ERDS2FJ152	1/4W 1.5K	2	
R313, 14	ERDS2FJ272	1/4W 2.7K	2	
R315	ERDS2FJ100	1/4W 10	1	
R316	ERDS2FJ103	1/4W 10K	1	
R317	ERDS2FJ223	1/4W 22K	1	
R318	ERDS2FJ103	1/4W 10K	1	
R319	ERDS2FJ183	1/4W 18K	1	
R320	ERDS2FJ223	1/4W 22K	1	
R323-26	ERDS2FJ222	1/4W 2.2K	4	
R327, 28	ERDS2FJ273	1/4W 27K	2	
R329, 30	ERDS2FJ182	1/4W 1.8K	2	
R331, 32	ERDS2FJ102	1/4W 1K	2	
R333	ERDS2FJ272	1/4W 2.7K	1	
R334	ERDS2FJ562	1/4W 5.6K	1	
R335	ERDS2FJ473	1/4W 47K	1	
R336	ERDS2FJ471	1/4W 470	1	
R337	ERDS2FJ272	1/4W 2.7K	1	
R339, 40	ERDS2FJ332	1/4W 3.3K	2	
R341, 42	ERDS2FJ392	1/4W 3.9K	2	
R343, 44	ERDS2FJ472	1/4W 4.7K	2	
R345, 46	ERDS2FJ102	1/4W 1K	2	
R347, 48	ERDS2FJ473	1/4W 47K	2	
R349, 50	ERDS2FJ272	1/4W 2.7K	2	
R351, 52	ERDS2FJ153	1/4W 15K	2	
R353-56	ERDS2FJ390	1/4W 39	4	
R357, 58	ERDS2FJ101	1/4W 100	2	
R359, 60	ERDS2FJ472	1/4W 4.7K	2	
R361, 62	ERDS2FJ104	1/4W 100K	2	
R363	ERDS2FJ103	1/4W 10K	1	
R364	ERDS2FJ123	1/4W 12K	1	
R365	ERDS2FJ332	1/4W 3.3K	1	
R366	ERDS2FJ154	1/4W 150K	1	
R367	ERDS2FJ683	1/4W 68K	1	
R376	ERDS2FJ153	1/4W 15K	1	
R377	ERDS2FJ222	1/4W 2.2K	1	
R380-82	ERDS2FJ222	1/4W 2.2K	3	
R383	ERDS2FJ271	1/4W 270	1	
R384	ERDS2FJ471	1/4W 470	1	
R385	ERDS2FJ472	1/4W 4.7K	1	
R386	ERDS2FJ473	1/4W 47K	1	
R387, 88	ERDS2FJ102	1/4W 1K	2	
R389	ERDS2FJ222	1/4W 2.2K	1	
R391, 92	ERDS2FJ103	1/4W 10K	2	
R393, 94	ERDS2FJ563	1/4W 56K	2	
R395, 96	ERDS2FJ683	1/4W 68K	2	
R397	ERDS2FJ122	1/4W 1.2K	1	
R398	ERDS2FJ2R7	1/4W 2.7	1	
R399	ERDS2FJ471	1/4W 470	1	
R400	ERDS2FJ102	1/4W 1K	1	
R401	ERDS2FJ101	1/4W 100	1	
R402, 03	ERDS2FJ472	1/4W 4.7K	2	
R404	ERDS2FJ101	1/4W 100	1	
R405, 06	ERDS2FJ472	1/4W 4.7K	2	
R407	ERDS2FJ102	1/4W 1K	1	
R408	ERDS2FJ473	1/4W 47K	1	
R409	ERDS2FJ223	1/4W 22K	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R410	ERDS2FJ103	1/4W 10K	1	
R411	ERDS2FJ472	1/4W 4.7K	1	
R412, 13	ERDS2FJ473	1/4W 47K	2	
R501, 02	ERDS1FJ270	1/2W 27	2	
R503	ERDS2FJ332	1/4W 3.3K	1	
R504, 05	ERDS2FJ562	1/4W 5.6K	2	
R506	ERDS2FJ223	1/4W 22K	1	
R508	ERDS1FJ681	1/2W 680	1	
R510	ERDS1FJ681	1/2W 680	1	
R511	ERDS1FJ472	1/2W 4.7K	1	
R513	ERDS2FJ561	1/4W 560	1	
R514	ERDS1FJ6R8	1/2W 6.8	1	
R515	ERDS2FJ151	1/4W 150	1	
R516	ERDS2FJ152	1/4W 1.5K	1	
R517, 18	ERDS1FJ180	1/2W 18	2	
R519	ERDS1FJ6R8	1/2W 6.8	1	
R520	ERDS2FJ332	1/4W 3.3K	1	
R521	ERDS2FJ561	1/4W 560	1	
R522, 23	ERDS2FJ560	1/4W 56	2	
R524, 25	ERDS2FJ272	1/4W 2.7K	2	
R526	ERDS2FJ391	1/4W 390	1	
R527	ERDS2FJ560	1/4W 56	1	
R528	ERDS2FJ561	1/4W 560	1	
R529	ERDS1FJ150	1/2W 15	1	
R530-32	ERDS1FJ270	1/2W 27	3	
R533	ERDS2FJ182	1/4W 1.8K	1	
R534	ERDS2FJ151	1/4W 150	1	
R535	ERDS2FJ824	1/4W 820K	1	
⚠ R535A	ERD2FCJ4R7	1/4W 4.7	1	
R536	ERDS2FJ472	1/4W 4.7K	1	
R537	ERDS2FJ151	1/4W 150	1	
R538	ERDS2FJ153	1/4W 15K	1	
R539	ERDS2FJ393	1/4W 39K	1	
R540, 42	ERDS2FJ472	1/4W 4.7K	2	
R543, 44	ERDS2FJ222	1/4W 2.2K	2	
R545	ERDS2FJ472	1/4W 4.7K	1	
R546	ERDS2FJ683	1/4W 68K	1	
R547	ERDS2FJ224	1/4W 220K	1	
R548	ERDS2FJ472	1/4W 4.7K	1	
R549	ERDS2FJ471	1/4W 470	1	
R550	ERDS1FJ6R8	1/2W 6.8	1	
R552	ERDS2FJ471	1/4W 470	1	
R553	ERDS1FJ6R8	1/2W 6.8	1	
R601	ERDS2FJ272	1/4W 2.7K	1	
⚠ R602, 03	ERDS2FJ331	1/4W 330	2	
R606	ERDS2FJ272	1/4W 2.7K	1	
R607-10	ERDS2FJ153	1/4W 15K	4	
R611, 12	ERDS2FJ152	1/4W 1.5K	2	
R613, 14	ERDS2FJ392	1/4W 3.9K	2	
R617, 18	ERDS2FJ563	1/4W 56K	2	
R619, 20	ERDS2FJ124	1/4W 120K	2	
R623	ERDS2FJ684	1/4W 680K	1	
R624	ERDS2FJ103	1/4W 10K	1	
R626	ERDS2FJ124	1/4W 120K	1	
R627	ERDS2FJ154	1/4W 150K	1	
R628	ERDS2FJ184	1/4W 180K	1	
R629	ERDS2FJ124	1/4W 120K	1	
R631, 32	ERDS2FJ152	1/4W 1.5K	2	
R633, 34	ERDS1FJ272	1/2W 2.7K	2	
R635	ERDS1FJ561	1/2W 560	1	
R636	ERDS2FJ824	1/4W 820K	1	
R637	ERDS2FJ223	1/4W 22K	1	
R638	ERDS2FJ104	1/4W 100K	1	
R641, 42	ERDS1FJ100	1/2W 10	2	
R645, 46	ERDS1FJ100	1/2W 10	2	
⚠ R647, 48	ERD2FCJ4R7	1/4W 4.7	2	
R700	ERDS2FJ104	1/4W 100K	1	
R701	ERJ6GEYJ4R7A	1/10W 4.7	1	
R701A	ERDS2FJ104	1/4W 100K	1	
R702	ERJ6GEYJ822A	1/10W 8.2K	1	
R702A	ERDS2FJ102	1/4W 1K	1	
R703	ERJ6GEYJ823A	1/10W 82K	1	
R703A	ERDS2FJ221	1/4W 220	1	
R704	ERJ6GEYJ102A	1/10W 1K	1	
R704A	ERDS2FJ221	1/4W 220	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R705	ERJ6GEYJ124A	1/10W 120K	1	
R705A	ERDS2FJ103	1/4W 10K	1	
R706	ERJ6GEYJ102A	1/10W 1K	1	
R706A	ERDS2FJ103	1/4W 10K	1	
R707	ERJ6GEYJ474A	1/10W 470K	1	
R707A	ERDS2FJ103	1/4W 10K	1	
R708	ERJ6GEYJ154A	1/10W 150K	1	
R708A	ERDS2FJ102	1/4W 1K	1	
R709	ERJ6GEYJ473A	1/10W 47K	1	
R709A	ERDS2FJ101	1/4W 100	1	
R710	ERJ6GEYJ103A	1/10W 10K	1	
R710A	ERDS2FJ101	1/4W 100	1	
R711	ERJ6GEYJ154A	1/10W 150K	1	
R711A	ERDS2FJ101	1/4W 100	1	
R712	ERJ6GEYJ221A	1/10W 220	1	
R712A	ERDS2FJ101	1/4W 100	1	
R713	ERDS2FJ103	1/4W 10K	1	
R714	ERJ6GEYJ121A	1/10W 120	1	
R714A	ERDS2FJ223	1/4W 22K	1	
R715	ERJ6GEYJ122A	1/10W 1.2K	1	
R715A	ERDS2FJ104	1/4W 100K	1	
R717	ERJ6GEYJ102A	1/10W 1K	1	
R717A	ERDS2FJ681	1/4W 680	1	
R718	ERJ6GEYJ102A	1/10W 1K	1	
R718A	ERDS2FJ472	1/4W 4.7K	1	
R719	ERJ8GEY0R00A	1/8W 0	1	
R720	ERJ6GEY0R00A	1/10W 0	1	
R720A	ERDS2FJ223	1/4W 22K	1	
R721	ERJ6GEYJ101A	1/10W 100	1	
R721A	ERDS2FJ102	1/4W 1K	1	
R722	ERJ6GEYJ563A	1/10W 56K	1	
R722A	ERDS2FJ334	1/4W 330K	1	
R723	ERJ6GEYJ182A	1/10W 1.8K	1	
R723A	ERDS2FJ470	1/4W 47	1	
R724	ERJ6GEYJ333A	1/10W 33K	1	
R724A	ERDS2FJ273	1/4W 27K	1	
R725	ERJ6GEYJ122A	1/10W 1.2K	1	
R725A	ERDS2FJ223	1/4W 22K	1	
R726	ERJ6GEYJ473A	1/10W 47K	1	
R726A	ERDS2FJ331	1/4W 330	1	
R727	ERJ6GEYJ682A	1/10W 6.8K	1	
R727A	ERDS2FJ103	1/4W 10K	1	
R728	ERJ6GEYJ682A	1/10W 6.8K	1	
R728A	ERDS2FJ822	1/4W 8.2K	1	
R729	ERJ6GEYJ562A	1/10W 5.6K	1	
R729A	ERDS2FJ472	1/4W 4.7K	1	
R730	ERDS2FJ103	1/4W 10K	1	
R731	ERJ6GEYJ822A	1/10W 8.2K	1	
R731A	ERDS2FJ153	1/4W 15K	1	
R732	ERDS2FJ103	1/4W 10K	1	
R733	ERDS2FJ821	1/4W 820	1	
R734	ERDS2FJ822	1/4W 8.2K	1	
R735	ERJ6GEYJ101A	1/10W 100	1	
R735A	ERDS2FJ334	1/4W 330K	1	
R736	ERJ6GEYJ101A	1/10W 100	1	
R736A, 37	ERDS2FJ223	1/4W 22K	2	
R738	ERDS2FJ472	1/4W 4.7K	1	
R739, 40	ERDS2FJ104	1/4W 100K	2	
R741	ERDS2FJ224	1/4W 220K	1	
R742, 43	ERDS2FJ473	1/4W 47K	2	
R744	ERJ6GEYJ104A	1/10W 100K	1	
R744A	ERDS2FJ473	1/4W 47K	1	
R745	ERJ6GEYJ155A	1/10W 1.5M	1	
R745A	ERDS2FJ473	1/4W 47K	1	
R746	ERDS2FJ101	1/4W 100	1	
R747	ERDS2FJ104	1/4W 100K	1	
R748	ERJ6GEYJ182A	1/10W 1.8K	1	
R748A	ERDS2FJ473	1/4W 47K	1	
R749	ERJ6GEYJ682A	1/10W 6.8K	1	
R749A, 50	ERDS2FJ104	1/4W 100K	2	
R751	ERDS2FJ473	1/4W 47K	1	
R752	ERJ8GEYJ220A	1/8W 22	1	
R752A-55	ERDS2FJ104	1/4W 100K	4	
R756	ERDS2FJ681	1/4W 680	1	
R757	ERDS2TJ106T	1/4W 10M	1	

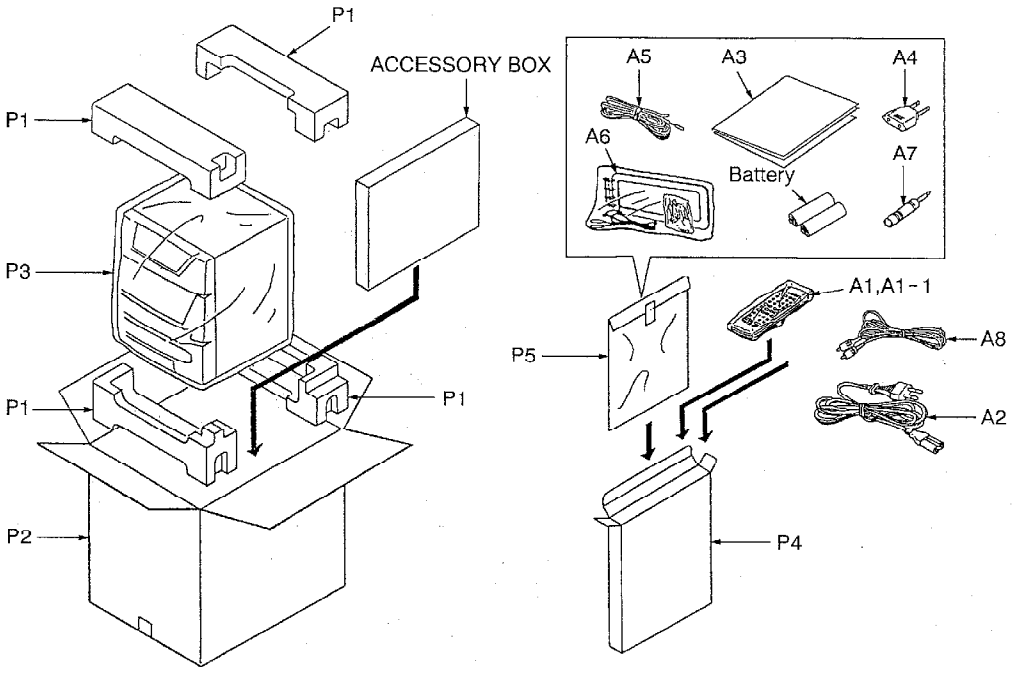
Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R758	ERDS2FJ101	1/4W 100	1	
R759	ERDS2FJ334	1/4W 330K	1	
R760	ERDS2FJ103	1/4W 10K	1	
R761	ERDS2FJ223	1/4W 22K	1	
R762, 63	ERDS2FJ104	1/4W 100K	2	
R764-66	ERDS2FJ472	1/4W 4.7K	3	
R767, 68	ERDS2FJ680	1/4W 68	2	
R769, 70	ERDS2FJ472	1/4W 4.7K	2	
R771	ERDS2FJ223	1/4W 22K	1	
R772	ERDS2FJ471	1/4W 470	1	
R773	ERDS2FJ223	1/4W 22K	1	
R774	ERDS2FJ472	1/4W 4.7K	1	
R775, 76	ERDS2FJ473	1/4W 47K	2	
R777-79	ERDS2FJ104	1/4W 100K	3	
R780	ERDS2FJ473	1/4W 47K	1	
R781, 82	ERDS2FJ221	1/4W 220	2	
R783	ERDS2FJ473	1/4W 47K	1	
R785-87	ERDS2FJ221	1/4W 220	3	
R789	ERDS2FJ104	1/4W 100K	1	
R791, 92	ERDS2FJ221	1/4W 220	2	
R794	ERDS2FJ221	1/4W 220	1	
R795, 96	ERDS2FJ104	1/4W 100K	2	
R797	ERDS2FJ101	1/4W 100	1	
R798	ERDS2FJ561	1/4W 560	1	
R799	ERDS2FJ472	1/4W 4.7K	1	
R801, 02	ERDS2FJ473	1/4W 47K	2	
R803	ERDS2FJ153	1/4W 15K	1	
R804	ERDS2FJ153	1/4W 15K	1	
R805	ERDS2FJ473	1/4W 47K	1	
R806	ERDS2FJ333	1/4W 33K	1	
R807	ERDS2FJ273	1/4W 27K	1	
R808	ERDS2FJ473	1/4W 47K	1	
R809-11	ERDS2FJ223	1/4W 22K	3	
R812-14	ERDS2FJ333	1/4W 33K	3	
R815, 16	ERDS2FJ473	1/4W 47K	2	
R817	ERDS2FJ103	1/4W 10K	1	
R818	ERDS2FJ153	1/4W 15K	1	
R819	ERDS2FJ103	1/4W 10K	1	
R820	ERDS2FJ274	1/4W 270K	1	
R821	ERDS2FJ822	1/4W 8.2K	1	
R822	ERDS2FJ333	1/4W 33K	1	
R823	ERDS2FJ473	1/4W 47K	1	
R824	ERDS2FJ823	1/4W 82K	1	
R825	ERDS2FJ392	1/4W 3.9K	1	
R826	ERDS2FJ104	1/4W 100K	1	
R827	ERDS2FJ472	1/4W 4.7K	1	
R828	ERDS2FJ823	1/4W 82K	1	
R829, 30	ERDS2FJ223	1/4W 22K	2	
R831	ERDS2FJ562	1/4W 5.6K	1	
R832	ERDS2FJ123	1/4W 12K	1	
R833, 34	ERDS2FJ104	1/4W 100K	2	
R836, 37	ERDS2FJ121	1/4W 120	2	
R838	ERDS2FJ223	1/4W 22K	1	
R839, 40	ERDS2FJ102	1/4W 1K	2	
R842	ERDS2FJ104	1/4W 100K	1	
R843	ERDS2FJ472	1/4W 4.7K	1	
R844	ERDS2FJ223	1/4W 22K	1	
R845, 46	ERDS2FJ153	1/4W 15K	2	
R847	ERDS2FJ103	1/4W 10K	1	
R848	ERDS2FJ223	1/4W 22K	1	
R849	ERDS2FJ104	1/4W 100K	1	
R850, 51	ERDS2FJ183	1/4W 18K	2	
R852	ERDS2FJ104	1/4W 100K	1	
R853	ERDS2FJ105	1/4W 1M	1	
R854	ERDS2FJ103	1/4W 10K	1	
R855, 56	ERDS2FJ392	1/4W 3.9K	2	
R857	ERDS2FJ103	1/4W 10K	1	
R859	ERDS2FJ222	1/4W 2.2K	1	
R860	ERDS2FJ223	1/4W 22K	1	
R861	ERDS2FJ105	1/4W 1M	1	
R862	ERDS2FJ102	1/4W 1K	1	
R863, 64	ERDS2FJ154	1/4W 150K	2	
R865-67	ERDS2FJ104	1/4W 100K	3	
R868	ERDS2FJ472	1/4W 4.7K	1	
R869, 70	ERDS2FJ121	1/4W 120	2	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R871, 72	ERDS2FJ105	1/4W 1M	2	
R874	ERDS2FJ472	1/4W 4.7K	1	
R875	ERDS2FJ121	1/4W 120	1	
R877, 78	ERDS2FJ105	1/4W 1M	2	
R880	ERDS2FJ222	1/4W 2.2K	1	
R881	ERDS2FJ121T	1/4W 120	1	
R883	ERDS2FJ121	1/4W 120	1	
R888	ERDS2FJ104	1/4W 100K	1	
R891, 92	ERDS2FJ122	1/4W 1.2K	2	
R893	ERDS2FJ103	1/4W 10K	1	
R894	ERDS2FJ153	1/4W 15K	1	
R895, 96	ERDS2FJ122	1/4W 1.2K	2	
R898	ERDS2FJ824	1/4W 820K	1	
R900	ERDS2FJ103	1/4W 10K	1	
R901	ERDS2FJ223	1/4W 22K	1	
R901A	ERDS2FJ104	1/4W 100K	1	
R902-03	ERDS2FJ103	1/4W 10K	3	
R903A	ERDS2FJ101	1/4W 100	1	
R904	ERDS2FJ223	1/4W 22K	1	
R904A	ERDS2FJ103	1/4W 10K	1	
R905	ERDS2FJ472	1/4W 4.7K	1	
R905A	ERDS2FJ101	1/4W 100	1	
R907	ERDS2FJ683	1/4W 68K	1	
R908	ERDS2FJ101	1/4W 100	1	
R910	ERDS2FJ102	1/4W 1K	1	
R911	ERDS2FJ271	1/4W 270	1	
R911A	ERDS2FJ472	1/4W 4.7K	1	
R912	ERDS2FJ271	1/4W 270	1	
R914	ERDS2FJ103	1/4W 10K	1	
R913	ERDS2FJ271	1/4W 270	1	
R915	ERDS2FJ103	1/4W 10K	1	
R915A	ERDS2FJ472	1/4W 4.7K	1	
R916	ERDS2FJ474	1/4W 470K	1	
R916A	ERDS2FJ103	1/4W 10K	1	
R917	ERDS2FJ271	1/4W 270	1	
R917A	ERDS2FJ472	1/4W 4.7K	1	
R918	ERDS2FJ272	1/4W 2.7K	1	
R918A	ERDS2FJ103	1/4W 10K	1	
R919	ERDS2FJ223	1/4W 22K	1	
R920-26	ERDS2FJ271	1/4W 270	7	
R927	ERDS2FJ181	1/4W 180	1	
R928	ERDS2FJ682	1/4W 6.8K	1	
R928A	ERDS2FJ221	1/4W 220	1	
R929	ERDS2FJ682	1/4W 6.8K	1	
R929A	ERDS2FJ221	1/4W 220	1	
R930	ERDS2FJ103	1/4W 10K	1	
R930A	ERDS2FJ472	1/4W 4.7K	1	
R931	ERDS2FJ271	1/4W 270	1	
R931A	ERDS2FJ102	1/4W 1K	1	
R932	ERDS2FJ271	1/4W 270	1	
R932A	ERDS2FJ102	1/4W 1K	1	
R933	ERDS2FJ271	1/4W 270	1	
R933A	ERDS2FJ222	1/4W 2.2K	1	
R934	ERDS2FJ271	1/4W 270	1	
R934A	ERDS2FJ102	1/4W 1K	1	
R935	ERDS2FJ271	1/4W 270	1	
R935A	ERDS2FJ102	1/4W 1K	1	
R936	ERDS2FJ222	1/4W 2.2K	1	
R936A	ERDS2FJ102	1/4W 1K	1	
R937	ERDS2FJ472	1/4W 4.7K	1	
R937A	ERDS2FJ102	1/4W 1K	1	
R938	ERDS2FJ101	1/4W 100	1	
R938A	ERDS2FJ102	1/4W 1K	1	
R939	ERDS2FJ472	1/4W 4.7K	1	
R939A	ERDS2FJ102	1/4W 1K	1	
R940	ERDS2FJ182	1/4W 1.8K	1	
R940A	ERDS2FJ102	1/4W 1K	1	
R941	ERDS2FJ682	1/4W 6.8K	1	
R941A	ERDS2FJ102	1/4W 1K	1	
R942	ERDS2FJ272	1/4W 2.7K	1	
R942A	ERDS2FJ102	1/4W 1K	1	
R943	ERDS2FJ103	1/4W 10K	1	
R943A-4A	ERDS2FJ101	1/4W 100	3	
R945	ERDS2FJ104	1/4W 100K	1	
R945A	ERDS2FJ101	1/4W 100	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R946	ERDS2FJ680	1/4W 68	1	
R947, 7A	ERDS2FJ101	1/4W 100	2	
R948	ERDS2FJ122	1/4W 1.2K	1	
R948A	ERDS2FJ101	1/4W 100	1	
R949	ERDS2FJ472	1/4W 4.7K	1	
R949A	ERDS2FJ101	1/4W 100	1	
R950	ERDS2FJ222	1/4W 2.2K	1	
R951	ERDS2FJ101	1/4W 100	1	
R952	ERDS2FJ821	1/4W 820	1	
R952A	ERDS2FJ272	1/4W 2.7K	1	
R953	ERDS2FJ393	1/4W 39K	1	
R953A	ERDS2FJ102	1/4W 1K	1	
R954	ERDS2FJ272	1/4W 2.7K	1	
R955	ERDS2FJ101	1/4W 100	1	
R956-58	ERDS2FJ101	1/4W 100	3	
R959	ERDS2FJ222	1/4W 2.2K	1	
R959A	ERDS2FJ101	1/4W 100	1	
R960	ERDS2FJ182	1/4W 1.8K	1	
R961	ERDS2FJ102	1/4W 1K	1	
R962	ERDS2FJ222	1/4W 2.2K	1	
R963	ERDS2FJ122	1/4W 1.2K	1	
R964	ERDS2FJ222	1/4W 2.2K	1	
R965	ERDS2FJ182	1/4W 1.8K	1	
R966	ERDS2FJ102	1/4W 1K	1	
R969	ERDS2FJ122	1/4W 1.2K	1	
R971	ERDS2FJ102	1/4W 1K	1	
R972	ERDS2FJ821	1/4W 820	1	
R972A	ERDS2FJ103	1/4W 10K	1	
R973	ERDS2FJ393	1/4W 39K	1	
R973A	ERDS2FJ682	1/4W 6.8K	1	
R974	ERDS2FJ102	1/4W 1K	1	
R975	ERDS2FJ223	1/4W 22K	1	
R976	ERDS2FJ102	1/4W 1K	1	
R976A	ERDS2FJ473	1/4W 47K	1	
R977	ERDS2FJ821	1/4W 820	1	
R978	ERDS2FJ102	1/4W 1K	1	
R979-81	ERDS2FJ271	1/4W 270	3	
R981A	ERDS2FJ221	1/4W 220	1	
R982	ERDS2FJ271	1/4W 270	1	
R983	ERDS2FJ331	1/4W 330	1	
R984	ERDS2FJ271	1/4W 270	1	
R984A	ERDS2FJ222	1/4W 2.2K	1	
R985	ERDS2FJ271	1/4W 270	1	
R985A	ERDS2FJ102	1/4W 1K	1	
R986	ERDS2FJ271	1/4W 270	1	
R986A-8A	ERDS2FJ102	1/4W 1K	5	
R989	ERDS2FJ122	1/4W 1.2K	1	
R989A	ERDS2FJ102	1/4W 1K	1	
R990	ERDS2FJ182	1/4W 1.8K	1	
R990A	ERDS2FJ102	1/4W 1K	1	
R991	ERDS2FJ103	1/4W 10K	1	
R992	ERDS2FJ331	1/4W 330	1	
R992A	ERDS2FJ103	1/4W 10K	1	
R993	ERDS2FJ331	1/4W 330	1	
R993A	ERDS2FJ102	1/4W 1K	1	
R994	ERDS2FJ104	1/4W 100K	1	
R994A	ERDS2FJ102	1/4W 1K	1	
R995-99	ERDS2FJ104	1/4W 100K	5	
R1000	ERJ3GEYJ562V	1/16W 5.6K	1	
R1001	ERJ3GEYJ101V	1/16W 100	1	
R1001A	ERDS2FJ223	1/4W 22K	1	
R1002	ERJ3GEYJ101V	1/16W 100	1	
R1002A	ERDS2FJ221	1/4W 220	1	
R1003	ERJ3GEYJ101V	1/16W 100	1	
R1003A	ERDS2FJ223	1/4W 22K	1	
R1004	ERJ3GEYJ103Z	1/16W 10K	1	
R1004A	ERDS2FJ223	1/4W 22K	1	
R1005	ERJ3GEYD750V	1/16W 75	1	
R1005A	ERDS2FJ223	1/4W 22K	1	
R1006	ERDS2FJ102	1/4W 1K	1	
R1006	ERJ3GEYJ103Z	1/16W 10K	1	
R1007	ERDS2FJ223	1/4W 22K	1	
R1007	ERJ3GEYD562V	1/16W 5.6K	1	
R1008	ERJ3GEYJ103Z	1/16W 10K	1	
R1008A	ERDS2FJ473	1/4W 47K	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R1009	ERJ3GEYD912V	1/16W 9.1K	1	
R1009A	ERDS2FJ473	1/4W 47K	1	
R1010	ERJ3GEYJ103Z	1/16W 10K	1	
R1010A	ERDS2FJ103	1/4W 10K	1	
R1011	ERJ3GEYJ103Z	1/16W 10K	1	
R1011A	ERDS2FJ223	1/4W 22K	1	
R1012	ERJ3GEYD332V	1/16W 3.3K	1	
R1012A	ERDS2FJ221	1/4W 220	1	
R1013, 14	ERJ3GEYD750V	1/16W 75	2	
R1014A	ERDS2FJ681	1/4W 680	1	
R1015	ERDS2FJ101	1/4W 100	1	
R1016	ERDS2FJ103	1/4W 10K	1	
R1017	ERDS2FJ221	1/4W 220	1	
R1020	ERJ3GEYJ222V	1/16W 1	1	
R1021	ERJ3GEYJ472V	1/16W 4.7K	1	
RJ701	ERJ6GEY0R00A	CHIP JUMPER	1	
RJ702-10	ERJ8GEY0R00A	CHIP JUMPER	9	
RJ715-17	ERJ8GEY0R00A	CHIP JUMPER	3	
RJ721, 22	ERJ6GEY0R00A	CHIP JUMPER	2	
RJ724-28	ERJ6GEY0R00A	CHIP JUMPER	5	
RJ731-33	ERJ6GEY0R00A	CHIP JUMPER	3	
⚠ RLY501	RSY0030M-D	RELAY	1	
S1	RSH1A005	SW, STOCKER DET	1	
S2, S3	RSH1A032-U	SW, UP/PLAY DET	2	
S4	RSH1A005	SW, TRAY OPEN DET	1	
S5	RSH1A032-U	SW, DISC NUMBER DET	1	
S501	ESE37314	SW, VOLTAGE ADJ.	1	
S701	RSH1A043-U	SW, REST	1	
S901	EVQPTD05Q	SW, PUSH	1	
S901A	RSS2A56ZA-H	SW, VIDEO OUT	1	
S902-09	EVQPTD05Q	SW, PUSH	8	
S911-39	EVQPTD05Q	SW, PUSH	29	
S951	RSH1A018-1U	SW, MODE (DECK 1)	1	
S952, 53	RSH1A019-2U	SW, HALF/CRO2 (DECK 1)	2	
S971	RSH1A018-1U	SW, MODE (DECK 2)	1	
S972-75	RSH1A019-2U	SW, HALF/CRO2/REC INH.	4	
⚠ T501	RTPIN3E009-V	POWER TRANSFORMER	1	
TJ701	EYF8CU	TEST JUMPER	1	
VR101-04	RRN6B05B24TA	VR, GAIN ADJ.	4	
VR901	EVQVBPF0224B	VR, VOLUME	1	
VR902	RESD018	VR, SOUND EQ	1	
VR903	EVUFZAF15B14	VR, MIC VOLUME	1	
W1	REEX0027	PRI WIRE (VIOLET)	1	GC
W2	REEX0028	PRI WIRE (GREY)	1	GC
W4	REE0854	PRI WIRE (YELLOW)	1	GC
W6	REE0856	1P WIRE	1	GC
W8	REE0855	1P WIRE	1	GC
W9	REE0863	PRI WIRE (RED)	1	GC
W10	REEX0035-1	PRI WIRE (BROWN)	1	GC
W201	RWJ0208155RX	WIRE	1	
W300	RWJ0102065CK	MOTOR WIRE	1	
W502	REX0912	9P CABLE	1	
X102	RLFDFT13DD	OSCILLATOR	1	
X103	SVQ49U722-S	OSCILLATOR	1	
X701	RSXB16M9J02T	OSCILLATOR	1	
X901	RSXD32K7S02	OSCILLATOR	1	
X901A	EF0EC6004T4	OSCILLATOR	1	
X902	RSXZ8M00D01T	OSCILLATOR	1	
X1000	RSXC27M0S02T	OSCILLATOR	1	
Z101	EXBF7L355SYV	COMPONENT COMBINATION	1	
Z101A	RLA2Z003M-T	COMPONENT COMBINATION	1	
Z102	RLI2Z006M-T	COMPONENT COMBINATION	1	
Z120	RAL0029	FM FRONT END	1	
⚠ Z501	ERZV10V511CS	ZNR	1	
Z901	RCDGP1U28XD	REMOTE SENSOR	1	
Z971	EXBF7L355SYV	COMPONENT COMBINATION	1	

■ Packaging



Printed in Japan
F980503400MT/KH